

HCD-GX30/RG22/RG33

SERVICE MANUAL

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Canadian Model
HCD-GX30

AEP Model

UK Model

E Model

HCD-RG22/RG33

Australian Model

HCD-RG22

- HCD-GX30/RG22/RG33 are the tuner, deck, CD and amplifier section in MHC-By: Kevin C.E.I.T..

CD Section	Model Name Using Similar Mechanism	HCD-DX10
	CD Mechanism Type	CDM58F-K6
	Optical Pick-up Name	KSM-213DCP/Z-NP
Tape deck Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CWL43FF48

SPECIFICATIONS

Amplifier section

North American models: HCD-GX30

Continuous RMS power output (reference)
75 + 75 watts (6 ohms at
1 kHz, 10% THD)
Total harmonic distortion less than 0.07%
(6 ohms at 1 kHz, 40 W)

European models: HCD-RG33

DIN power output (rated) 60 + 60 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
75 + 75 watts (6 ohms at
1 kHz, 10% THD)
Music power output (reference)
150 + 150 watts (6 ohms
at 1 kHz, 10% THD)

HCD-RG22

DIN power output (rated) 50 + 50 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
60 + 60 watts (6 ohms at
1 kHz, 10% THD)
Music power output (reference)
120 + 120 watts (6 ohms
at 1 kHz, 10% THD)

Other models:

HCD-RG33

The following measured at AC 120, 220, 240 V,
50/60 Hz
DIN power output (rated) 60 + 60 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
75 + 75 watts (6 ohms at
1 kHz, 10% THD)

HCD-RG22

The following measured at AC 120, 220, 240 V
50/60 Hz
DIN power output (rated) 50 + 50 watts
(6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference)
60 + 60 watts (6 ohms at
1 kHz, 10% THD)

Inputs

AUDIO INPUT (phono jack):
voltage 450 mV,
impedance 47 kilohms

Outputs

PHONES (stereo mini jack):
accepts headphones of
8 ohms or more
accepts impedance of 6 to
16 ohms
Front speaker:
Sub woofer speaker (MHC-GX40 only):
accepts impedance of 12
to 16 ohms

CD player section

System Compact disc and digital
audio system
Laser Semiconductor laser
($\lambda=780$ nm)
Emission duration:
continuous
Frequency response 2 Hz – 20 kHz (± 0.5 dB)
Wavelength 780 – 790 nm
Signal-to-noise ratio More than 90 dB
Dynamic range More than 90 dB

Tape deck section

Recording system 4-track 2-channel stereo
Frequency response 50 – 13,000 Hz (± 3 dB),
using Sony TYPE I
cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 – 108.0 MHz
Antenna FM lead antenna
Antenna terminals 75 ohms unbalanced
Intermediate frequency 10.7 MHz

— Continued on next page —

MINI HI-FI COMPONENT SYSTEM

9-874-001-01
2002D1600-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

SAFETY CHECK-OUT

AM tuner section

Tuning range

Pan-American models: 530 – 1,710 kHz (with the interval set at 10 kHz)
531 – 1,710 kHz (with the interval set at 9 kHz)

European and Middle Eastern models:

531 – 1,602 kHz (with the interval set at 9 kHz)

Other models:

530 – 1,710 kHz (with the interval set at 10 kHz)
531 – 1,602 kHz (with the interval set at 9 kHz)

Antenna

Antenna terminals

AM loop antenna
External antenna terminal

Intermediate frequency

450 kHz

General

Power requirements

North American models: 120 V AC, 60 Hz

European models: 230 V AC, 50/60 Hz

Australian model: 230 – 240 V AC, 50/60 Hz

Argentine models: 220 V AC, 50/60 Hz

Mexican models: 120 V AC, 60 Hz

Other models: 120 V, 220 V or 230 – 240 V AC, 50/60 Hz
Adjustable with voltage selector

Power consumption

Canadian models:

MHC-GX30: 125 watts

European models:

MHC-RG33: 125 watts

0.5 watts (at the Power Saving Mode)

MHC-RG22: 105 watts

0.5 watts (at the Power Saving Mode)

Other models:

MHC-RG33: 125 watts

MHC-RG22: 105 watts

Dimensions (w/h/d) Approx. 280 × 325 × 412 mm

Mass

North American models:

HCD-GX30: Approx. 9.0 kg

European models:

HCD-RG33: Approx. 9.0 kg

HCD-RG22: Approx. 8.5 kg

Other models:

HCD-RG33: Approx. 9.5 kg

HCD-RG22: Approx. 9.0 kg

Supplied accessories:

Remote Commander (1)

Batteries (2)

AM loop antenna (1)

FM lead antenna (1)

Front speaker pads (8)

Design and specifications are subject to change without notice.

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

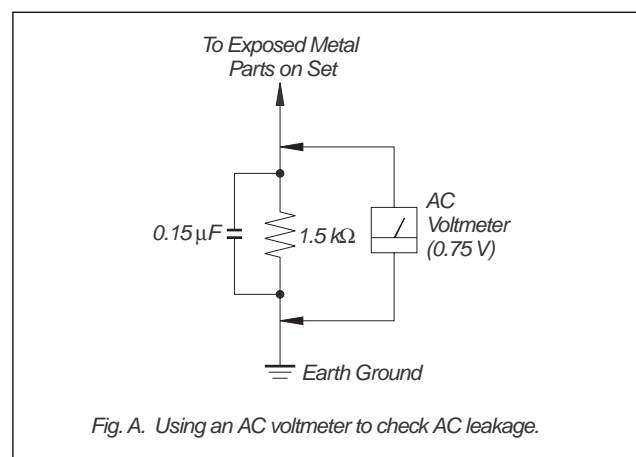


Fig. A. Using an AC voltmeter to check AC leakage.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

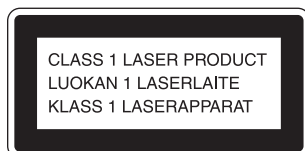
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted
from instruction manual.

Main unit

ALPHABETICAL ORDER

A - E

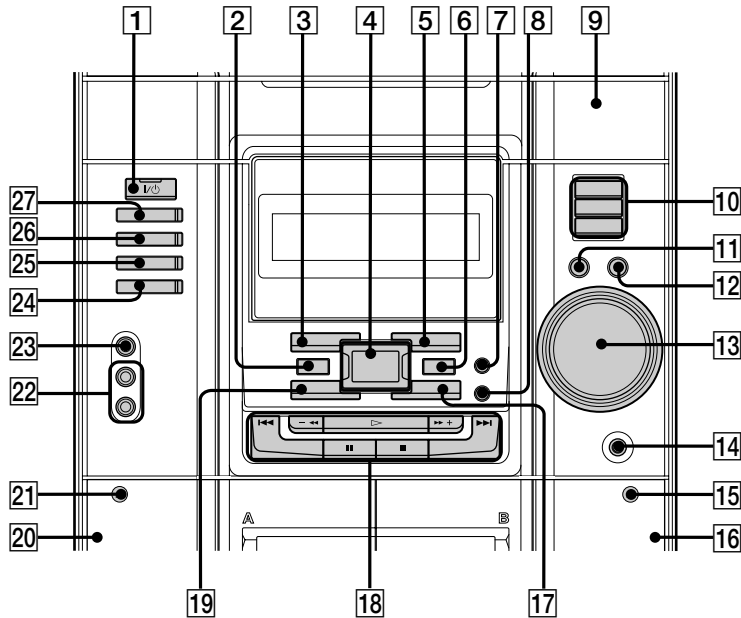
- AUDIO jacks 22 (24)
- CD 27 (11, 12, 18)
- CD SYNC 7 (18)
- Deck A 20 (16, 17)
- Deck B 16 (16 - 19)
- DISC 1 - 3 10 (11, 12)
- DISC SKIP/EX-CHANGE 11 (10, 11)
- Disc tray 9 (10)
- DISPLAY 2 (16, 21)
- EFFECT ON/OFF 17 (20)

G - Z

- GAME 24 (22, 24)
- GAME EQ 19 (20, 24)
- GAME MIXING 4 (22)
- GROOVE 6 (20)
- MOVIE EQ 5 (20)
- MUSIC EQ 9 (20)
- PHONES jack 14
- REC PAUSE/START 8 (18)
- TAPE A/B 25 (16, 18)
- TUNER/BAND 26 (13 - 15, 18)
- VIDEO jack 23 (24)
- VOLUME control 13

BUTTON DESCRIPTIONS

- I/⏻ (power) 1
- ▲ OPEN/CLOSE 12
- ▲ (deck B) 15
- ▶▶ 18
- ◀◀ 18
- ▶▶ 18
- || 18
- ▶ 18
- 18
- ◀◀ 18
- ▲ (deck A) 21



Remote Control

ALPHABETICAL ORDER

A – G

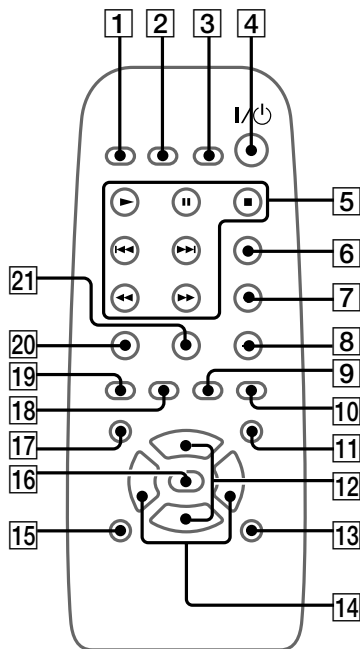
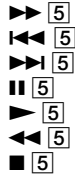
CD **19** (11, 12, 18)
 CLEAR **20** (12)
 CLOCK/TIMER SELECT **2**
 (19, 23)
 CLOCK/TIMER SET **9** (10, 19,
 23)
 DISPLAY **6** (16, 21)
 D.SKIP **7** (11)
 ENTER **15** (10, 12 – 14, 19, 23)
 EQ +/- **14** (20)
 GAME **10** (22, 24)
 GROOVE **13** (20)

O – Z

ON/OFF **16** (20)
 PLAY MODE **21** (11, 12, 17)
 PRESET +/- **5** (13 – 15)
 REPEAT **8** (11)
 SLEEP **1** (22)
 STEREO/MONO **8** (15)
 SURROUND **11** (20)
 TAPE A/B **9** (16, 18)
 TUNER MEMORY **17** (13, 14)
 TUNER/BAND **18** (13 – 15, 18)
 TUNING +/- **5** (13 – 15)
 VOL +/- **12**

BUTTON DESCRIPTIONS

I/⏻ (power) **4**



Setting the clock

- 1 Press I/⏻ to turn on the system.
- 2 Press CLOCK/TIMER SET on the remote.
- 3 Press I◀◀ or ▶▶I on the remote repeatedly to set the hour.
- 4 Press ENTER on the remote.
The minute indication flashes.
- 5 Press I◀◀ or ▶▶I on the remote repeatedly to set the minute.
- 6 Press ENTER on the remote.
The clock starts working.

To adjust the clock

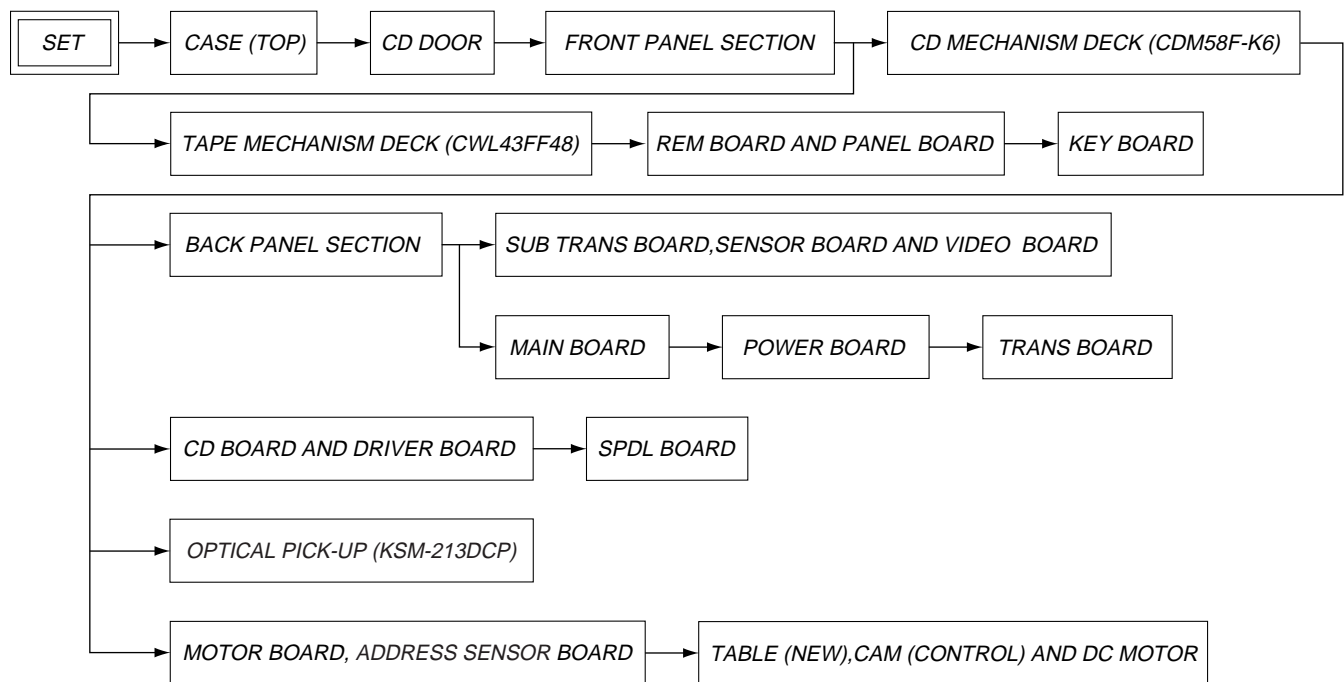
- 1 Press CLOCK/TIMER SET on the remote.
- 2 Press I◀◀ or ▶▶I on the remote to select "CLOCK SET", then press ENTER on the remote.
- 3 Do the same procedures as step 3 to 6 above.

Note

The clock settings are canceled when you disconnect the power cord or if a power failure occurs.

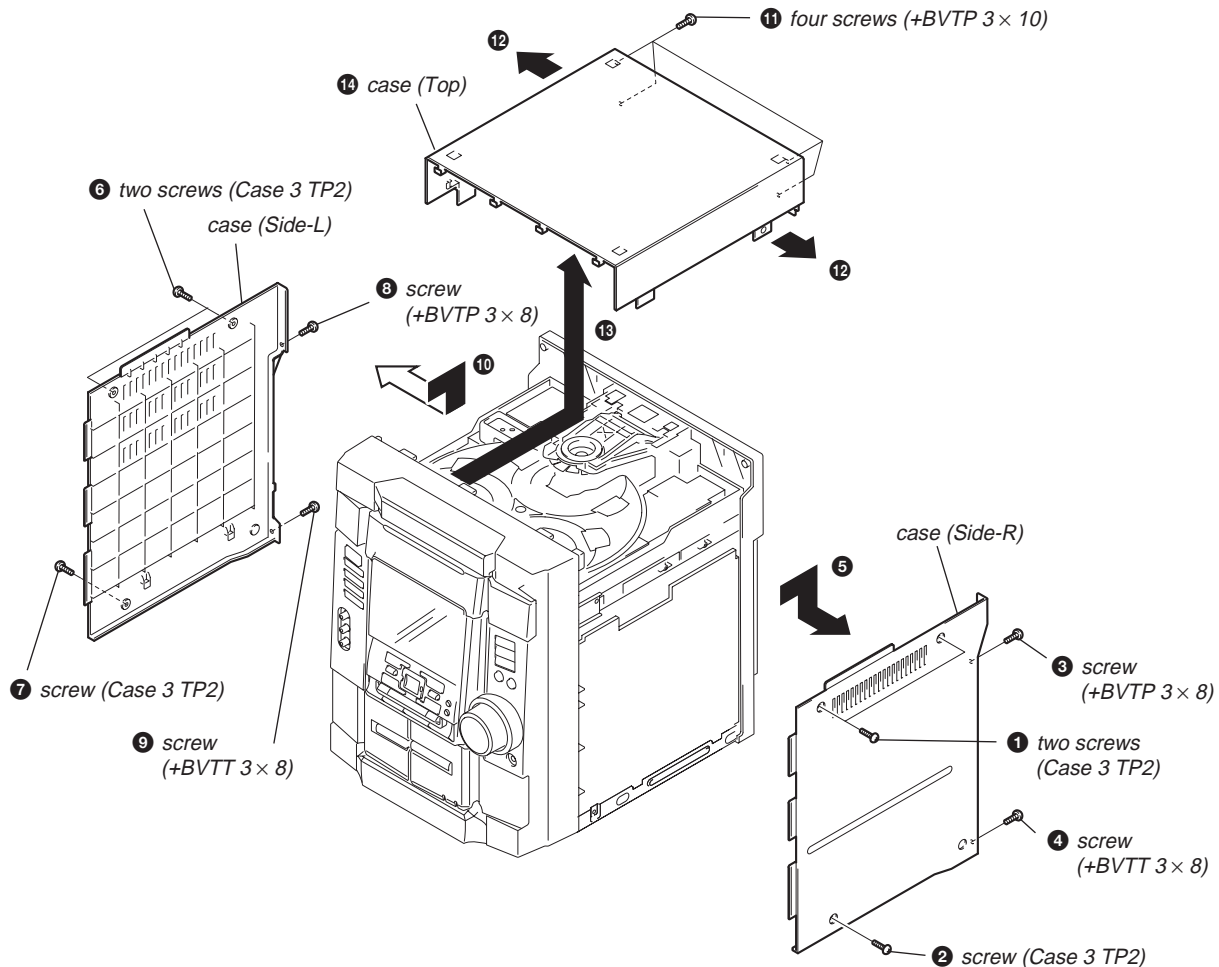
SECTION 2 DISASSEMBLY

Note : Disassemble the unit in the order as shown below.

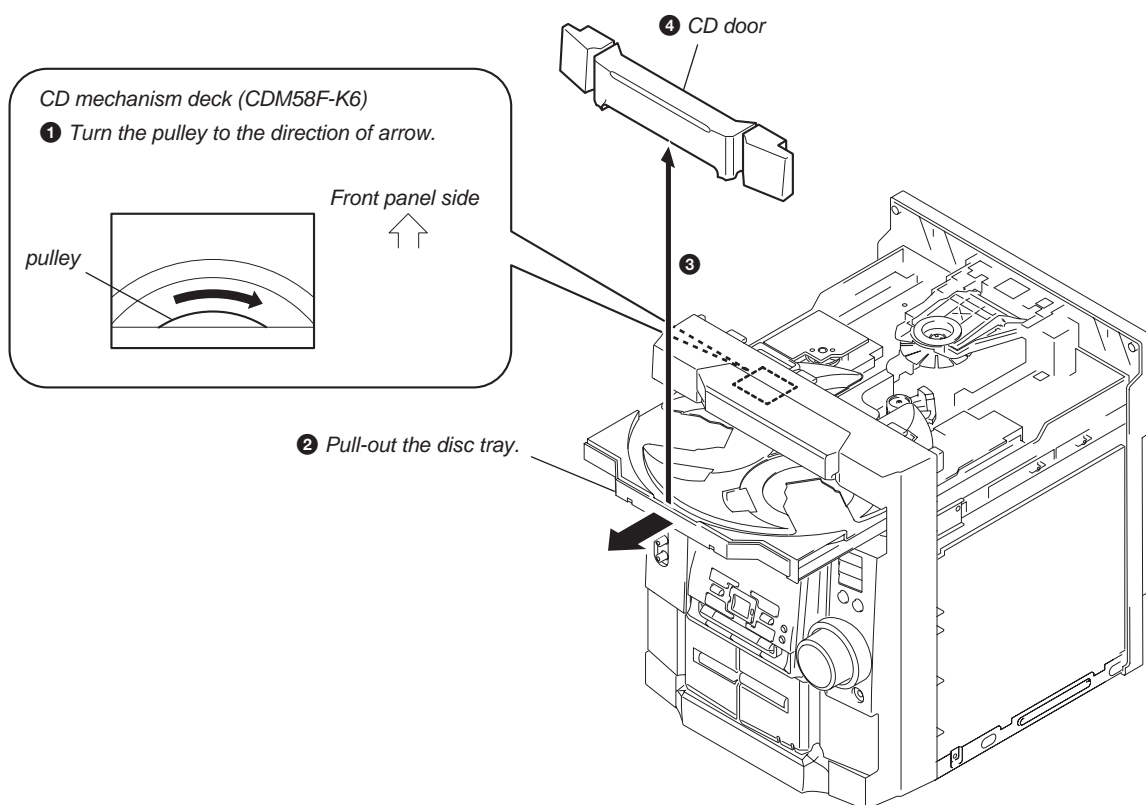


Note : Follow the disassembly procedure in the numerical order given.

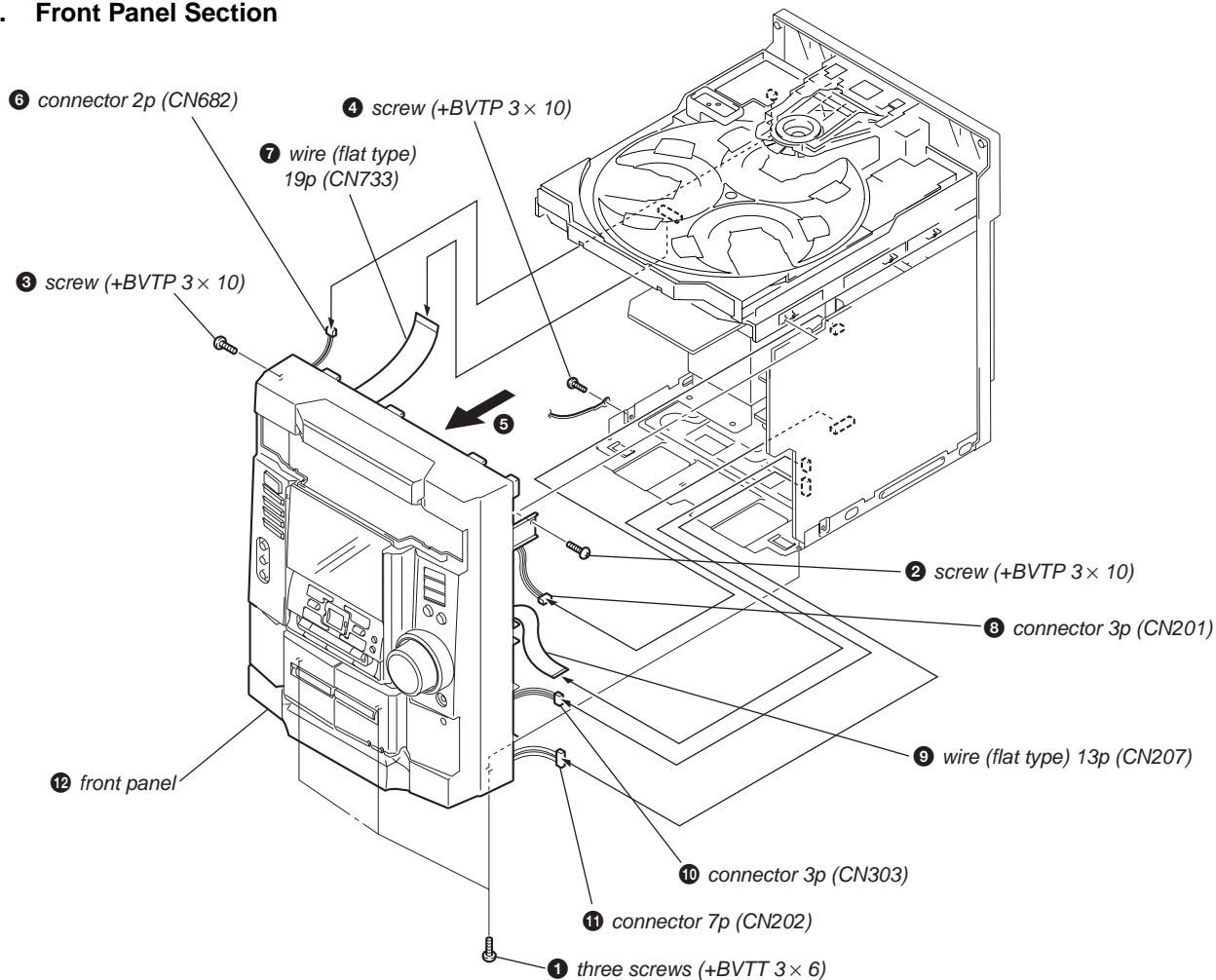
2-1. Case (Top)



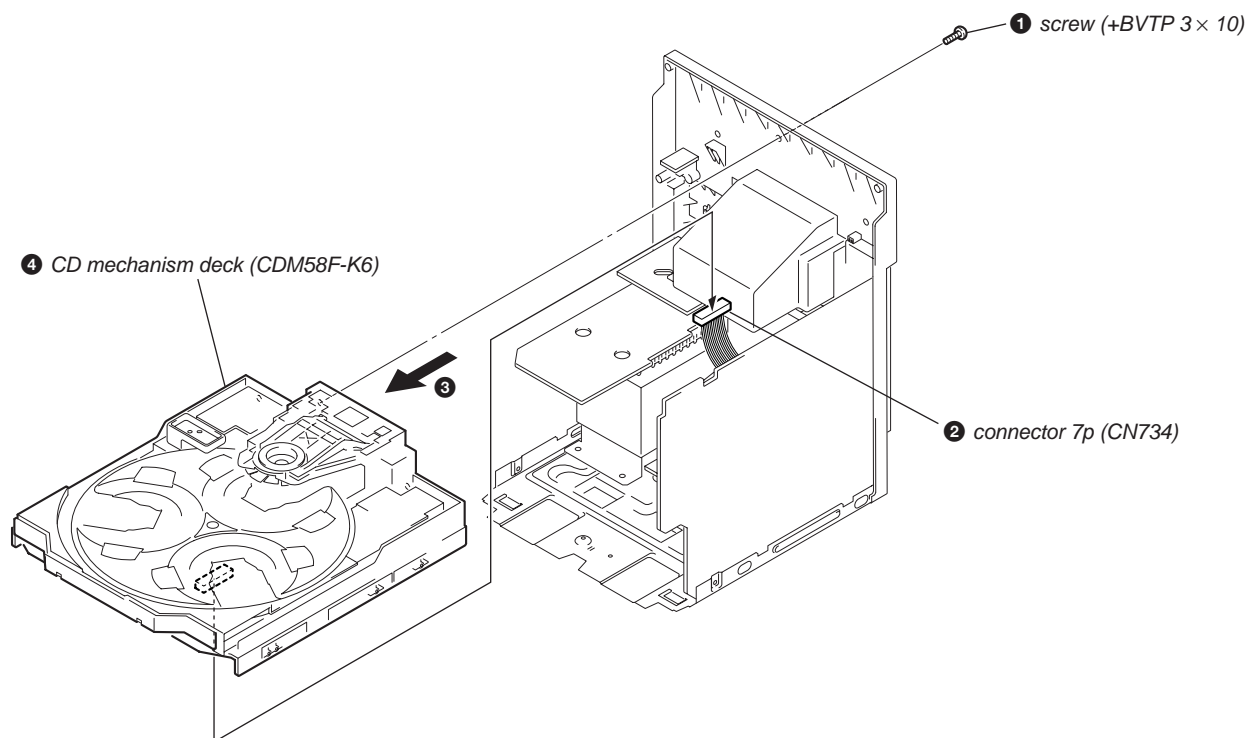
2-2. CD Door



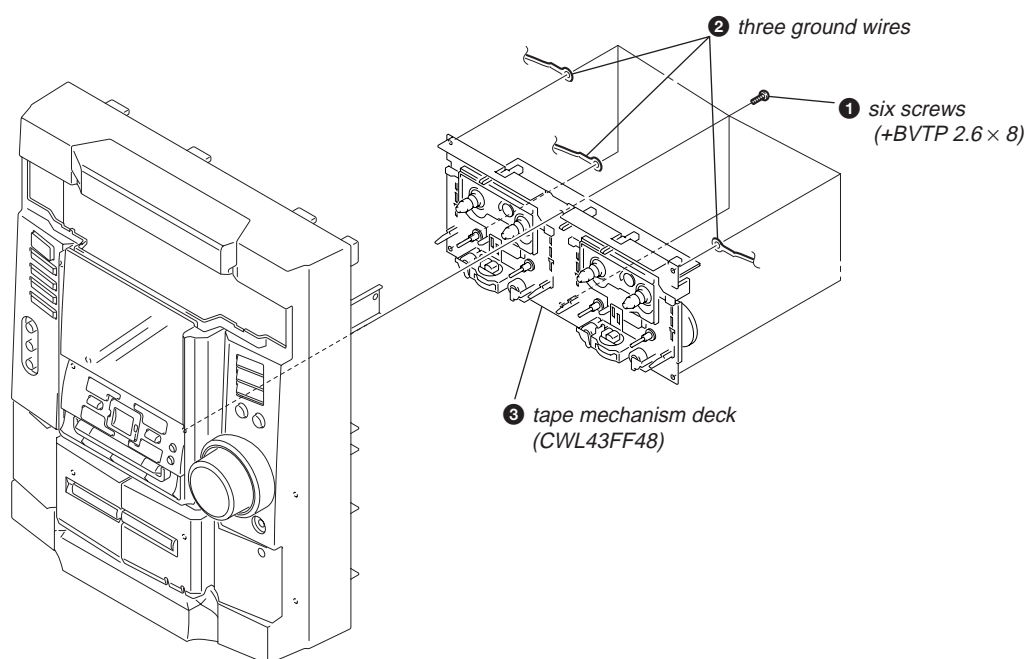
2-3. Front Panel Section



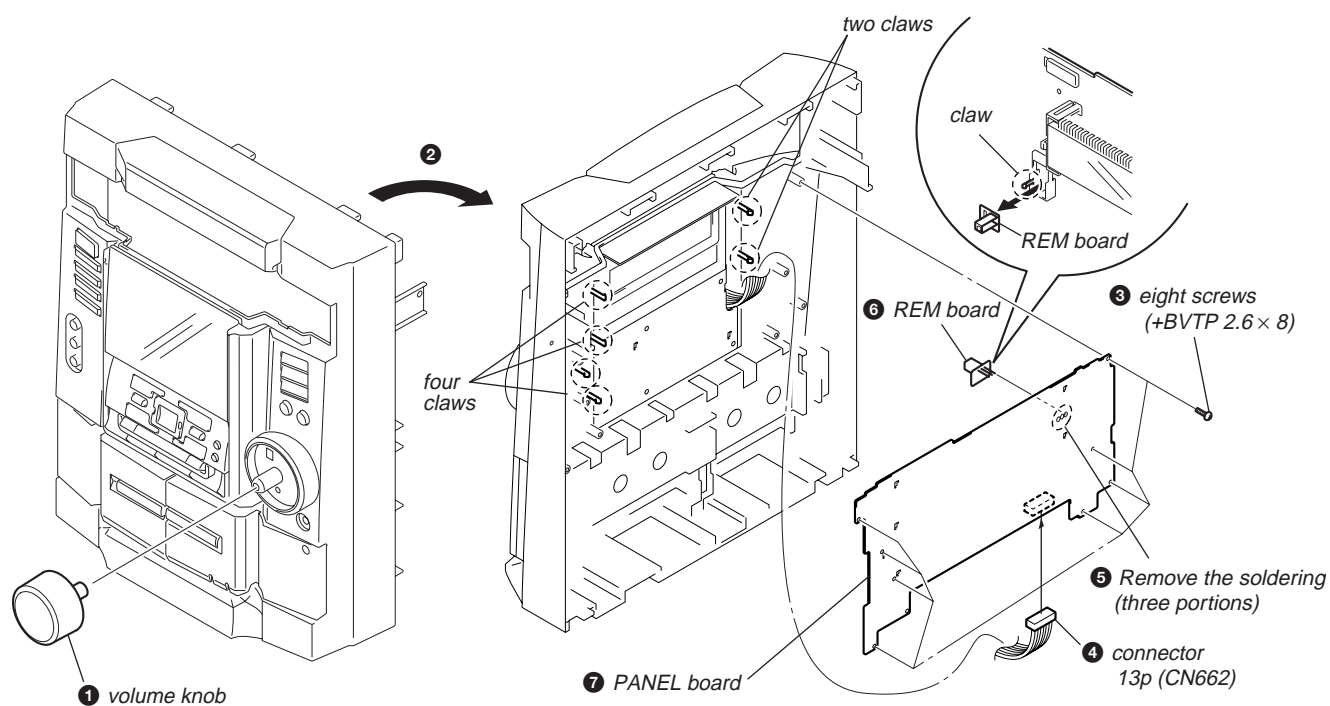
2-4. CD Mechanism Deck (CDM58F-K6)



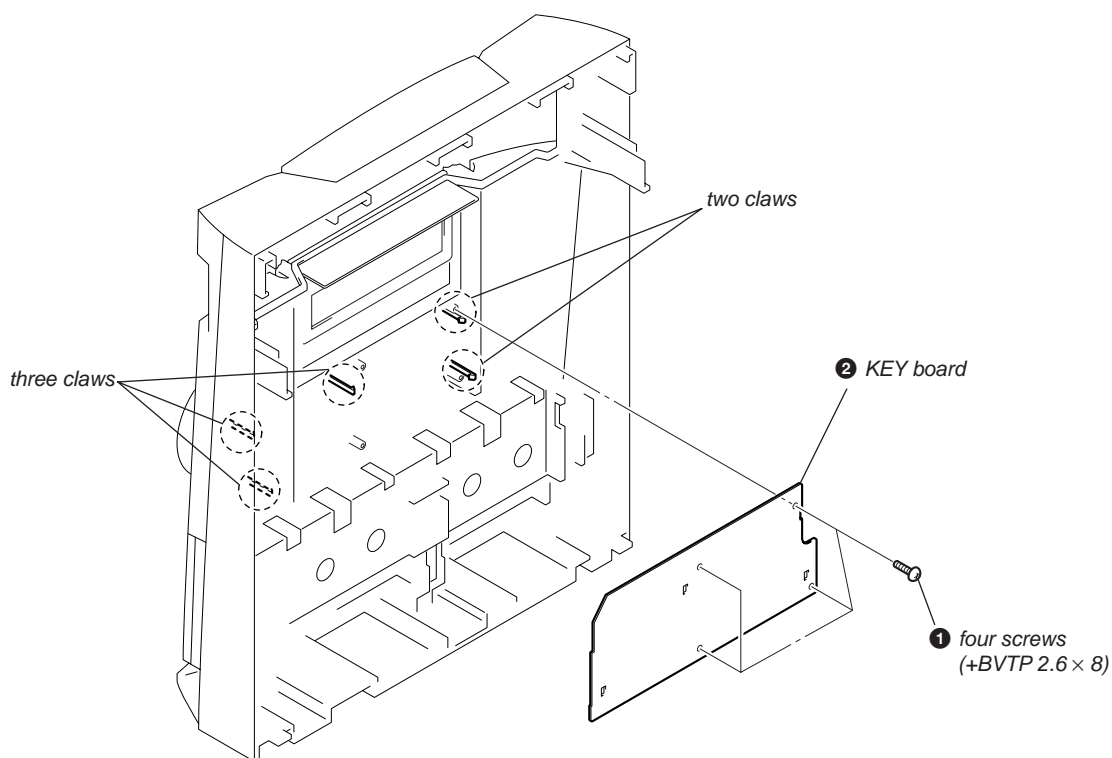
2-5. Tape Mechanism Deck (CWL43FF48)



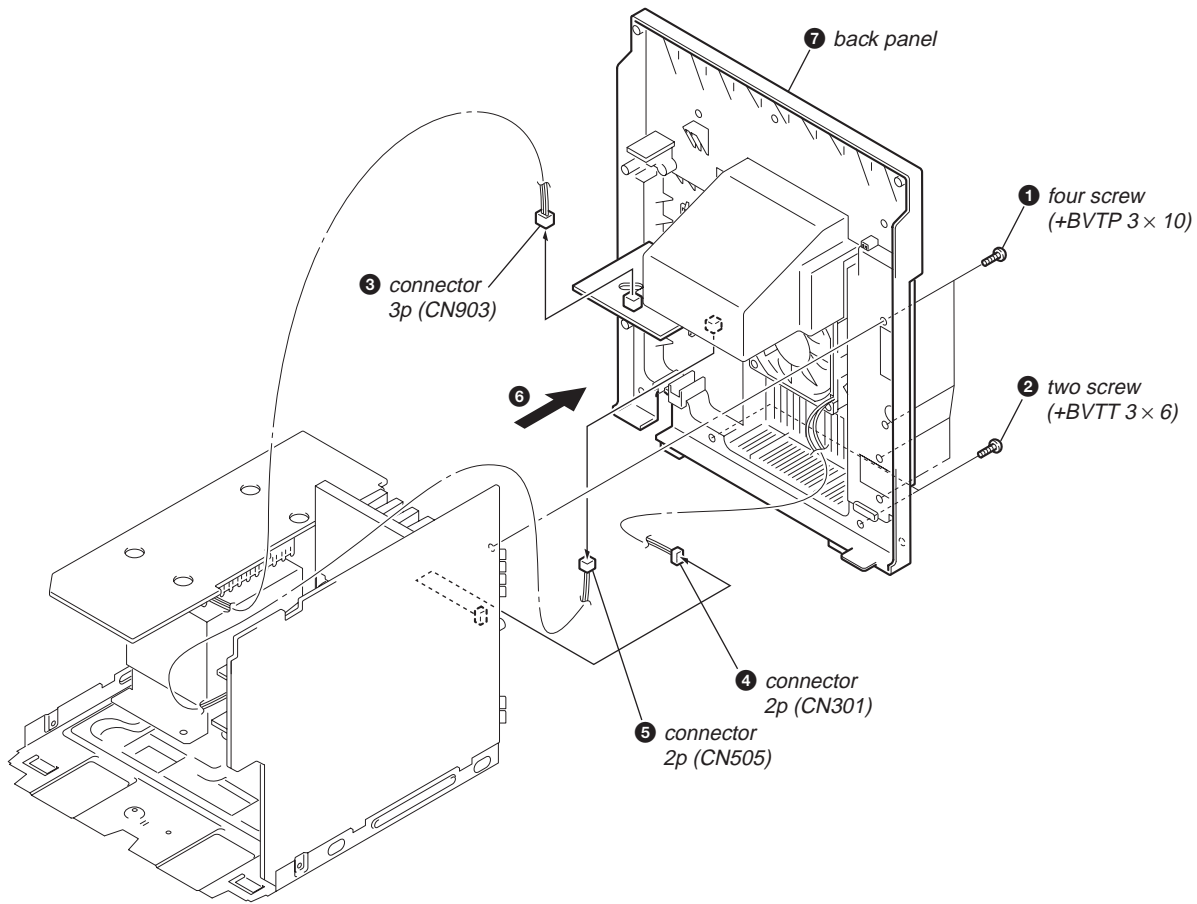
2-6. REM Board and PANEL Board



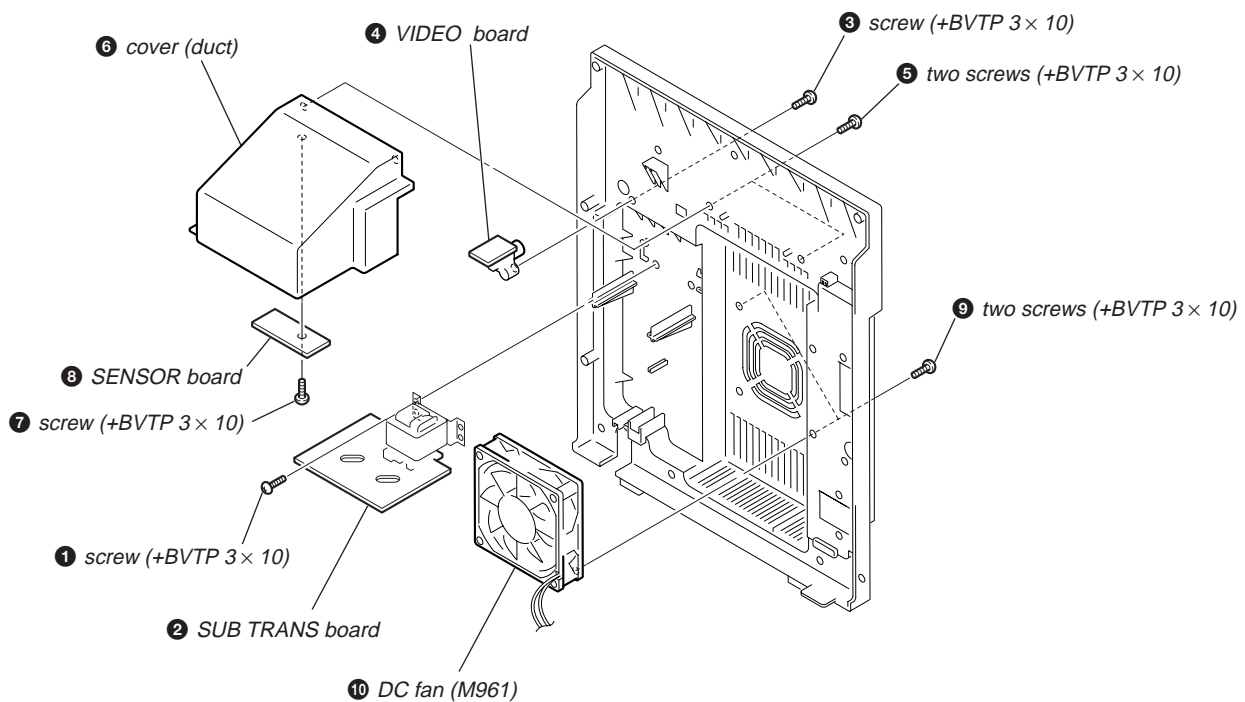
2-7. KEY Board



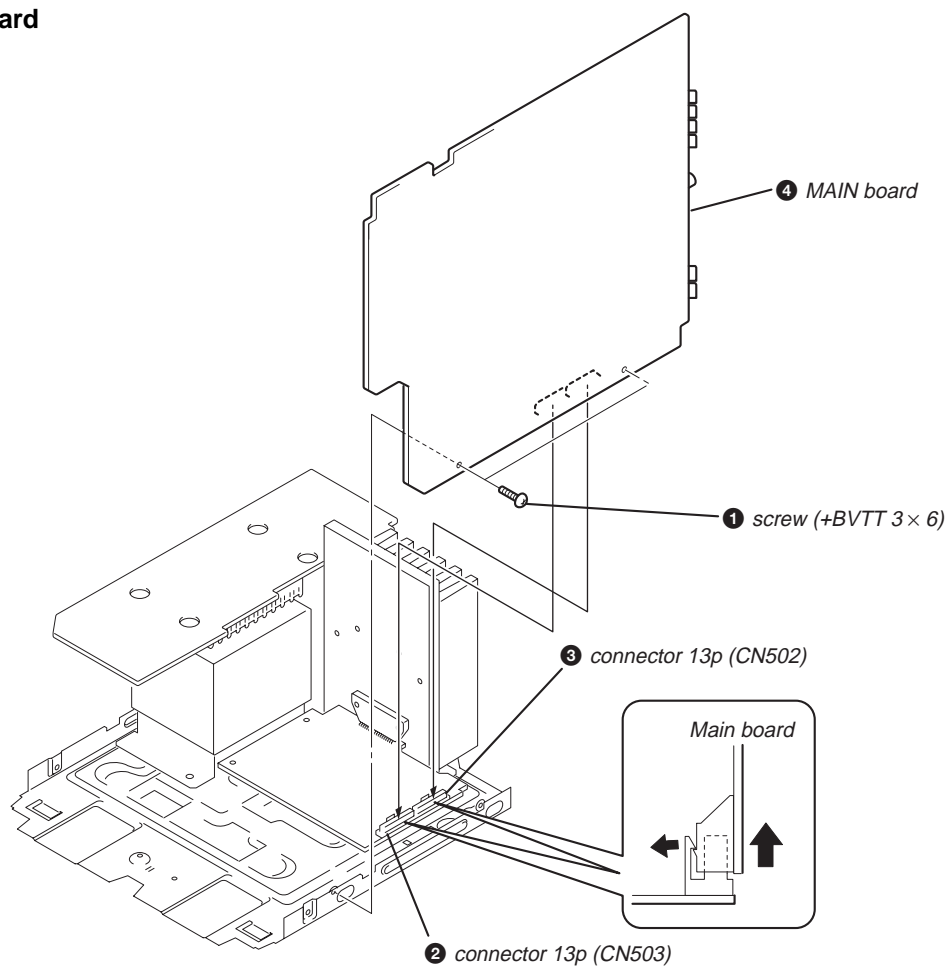
2-8. Back Panel Section



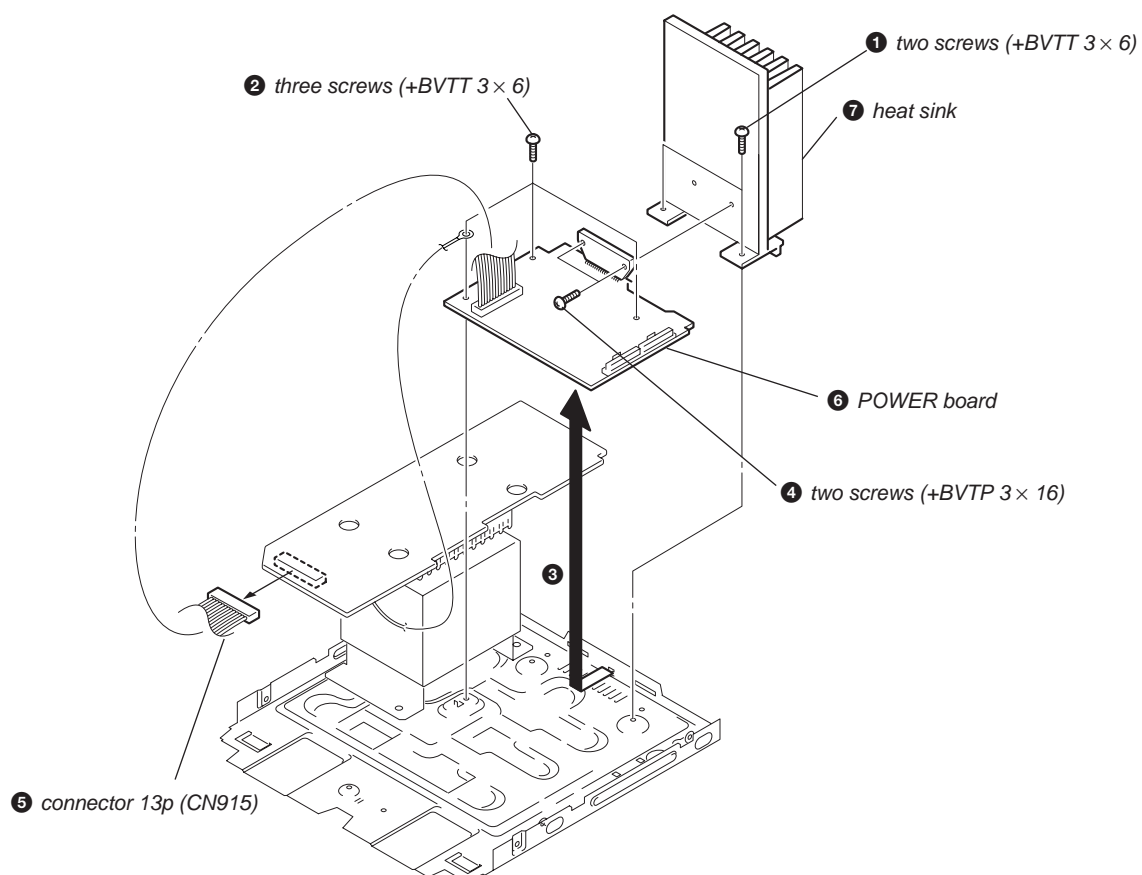
2-9. SUB TRANS Board, VIDEO OUT Board and SENSOR Board



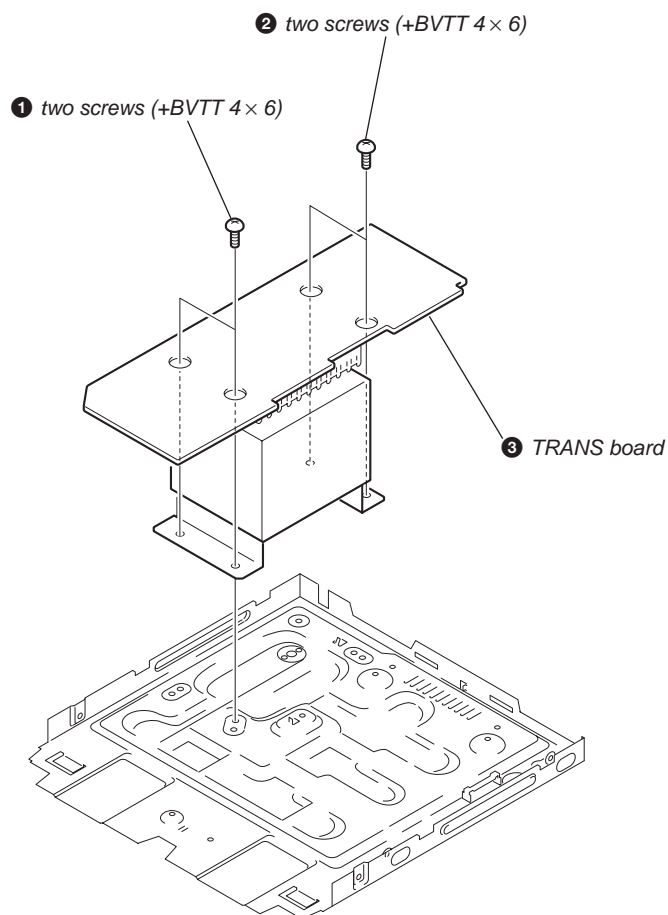
2-10. MAIN Board



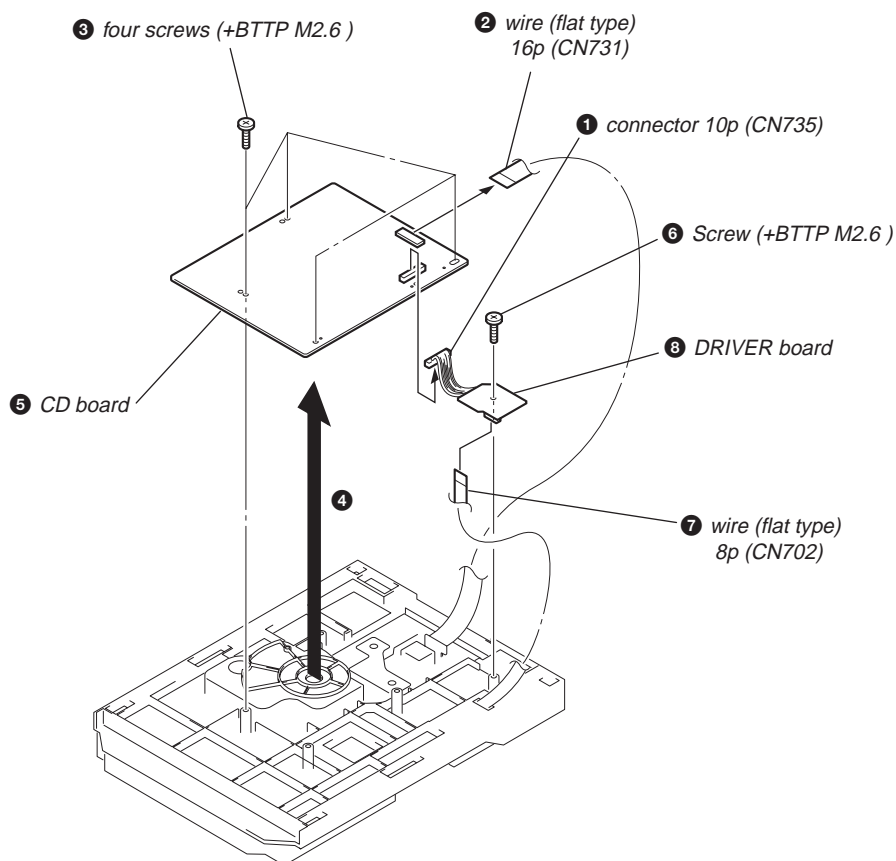
2-11. POWER Board



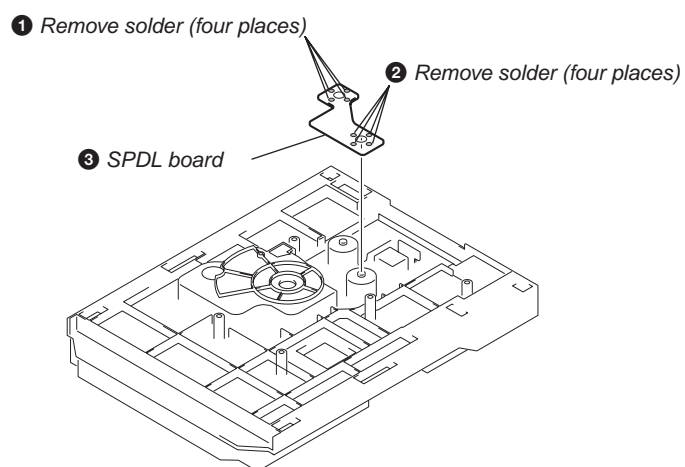
2-12. TRANS Board



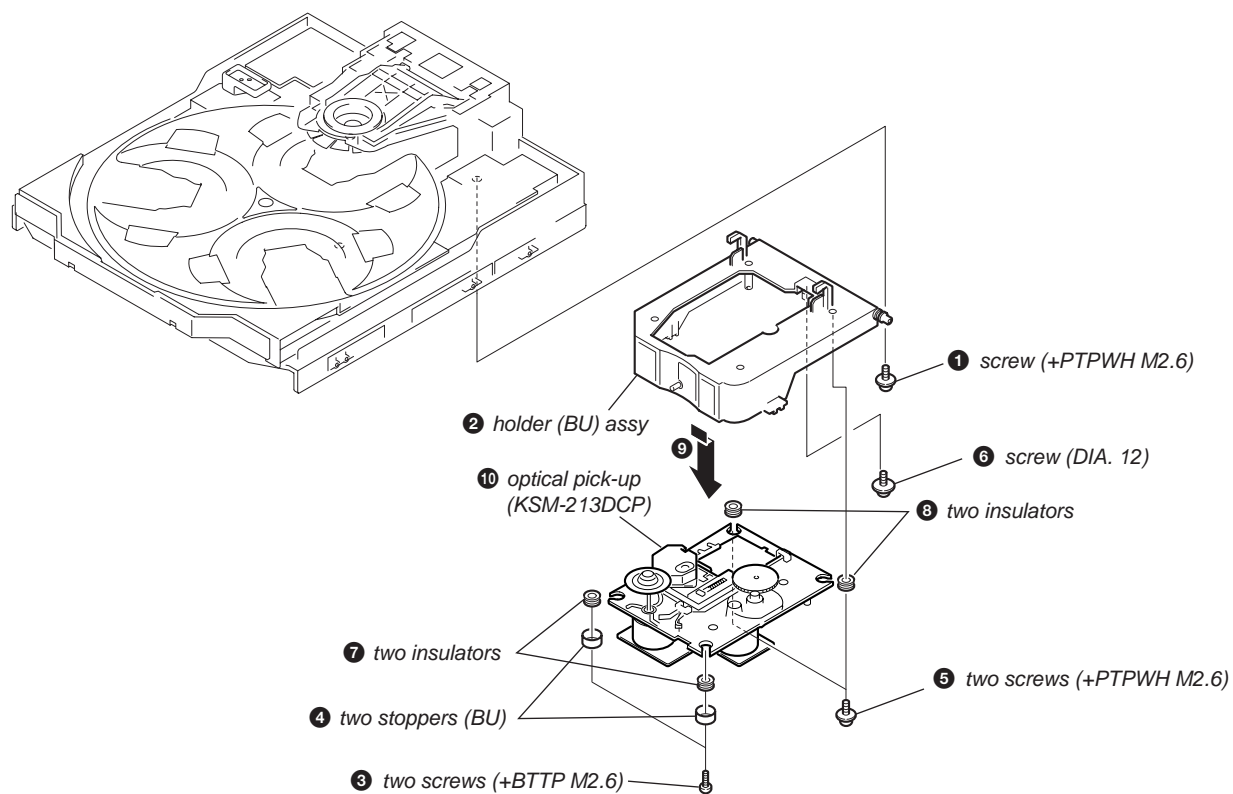
2-13. CD Board and DRIVER Board



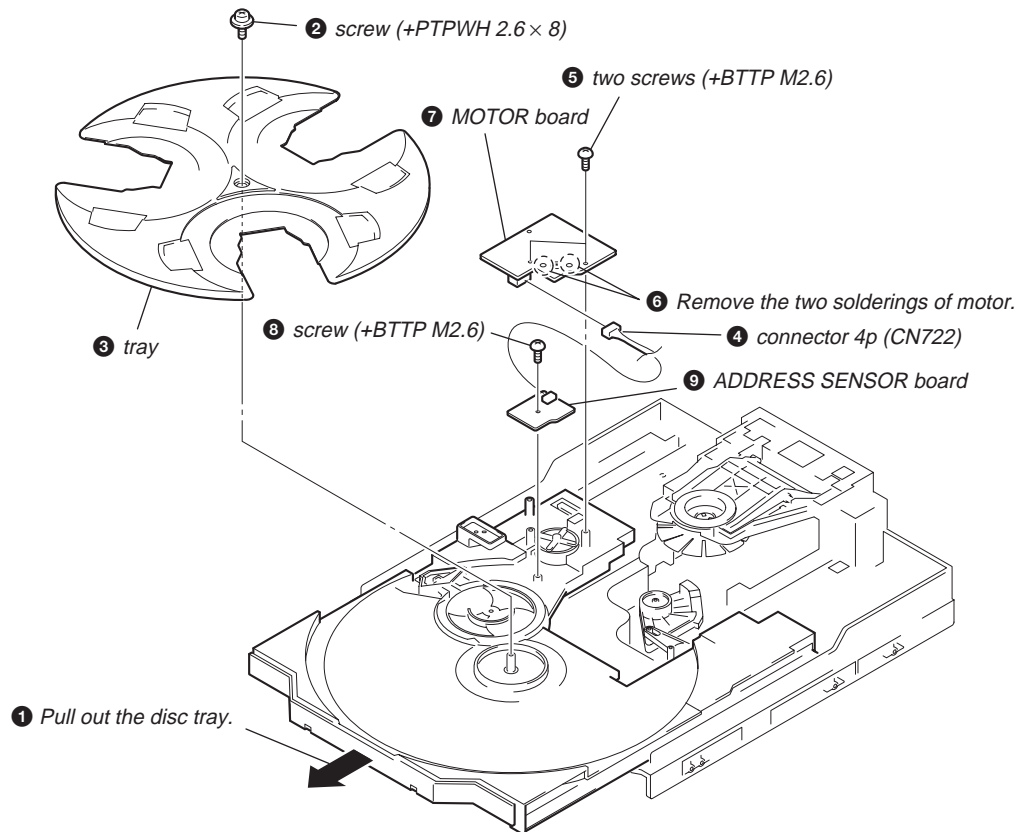
2-14. SPDL Board



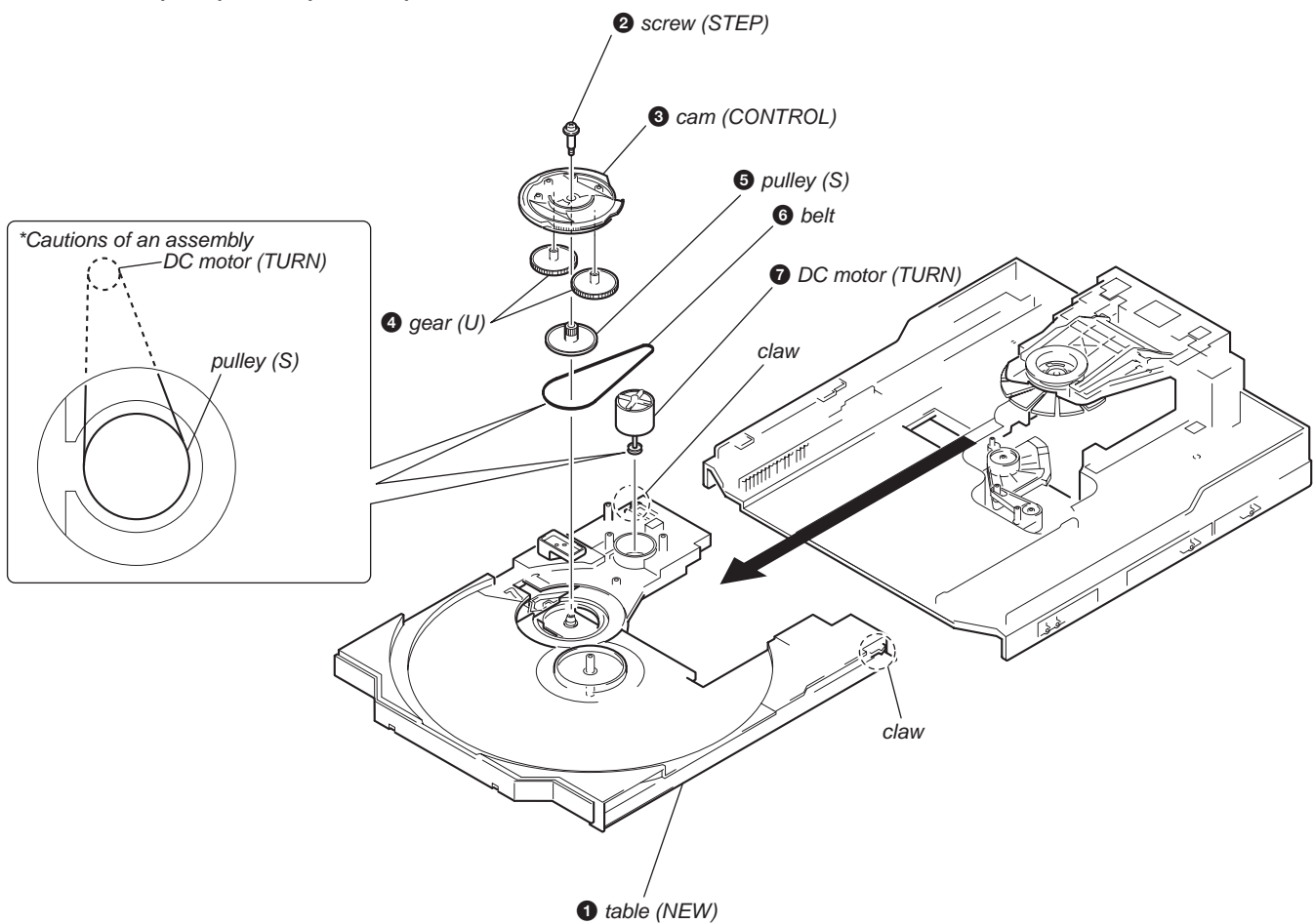
2-15. Optical Pick-up (KSM-213DCP)



2-16. MOTOR Board, ADDRESS SENSOR Board



2-17. Table (New), Cam (Control) and DC Motor






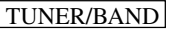

SECTION 3

TEST MODE

[Change-over of AM Tuner Step between 9 kHz and 10 kHz]

- A step of AM channels can be changed over between 9 kHz and 10 kHz. (Except AEP/UK models)


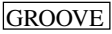

Procedure:

- Press  button to turn the set ON.
- Select the function "TUNER", and press  button to select the BAND "AM".
- Press  button to turn the set OFF.
- Press  and  buttons simultaneously, and the display of fluorescent indicator tube changes to "AM 9 k STEP" or "AM 10 k STEP", and thus the channel step is changed over.

[Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

- Press three buttons , , and  simultaneously.
- The fluorescent indicator tube displays "COLD RESET" and the set is reset.



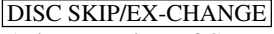
[Aging Mode]

This mode can be used for operation check of CD section and tape deck section.

- If an error occurred:
The aging operation stops and is displayed status.
- If no error occurs:
The aging operation continues repeatedly.

1. Operating method of Aging Mode

Turn on the main power and select "CD" of the function.

- Set three discs in tray. Select ALL DISCS, and REPEAT OFF.
- Load the tapes recording use into both decks.
- Press three buttons , , and  simultaneously.
- Aging operations of CD and tape are started at the same time.
- To exit the aging mode, perform [Cold Reset].

2. Aging mode in CD section

1) Operation during aging mode

- In the aging mode, the program is executed in the following sequence.
 - The disc tray opens and closes.
 - The disc tray turns to select a disc 3.
 - The pickup accesses to the first track, and plays 3 seconds.
 - The pickup accesses to the last track, and plays 3 seconds.
 - The disc tray opens and closes.
 - The disc tray turns to select a disc 1.
 - The same operation starts like step (3).
 - After a disc 1 aging operation, a disc 2 is selected.
 - When an aging operation of a disc 3 is completed, the display "AGING ***" value increases.
 - If no error occurs, the aging operation continues repeatedly.

2) Error display

Disc error	
Display	Error
E00D01022	Focus error (No disc)
E00D02022	Sub Q error (Focus is good)
E00D02023	TOC reading error
E00D02014	Access error (Unable within regular time)

Mechanism error	
Display	Error
E00M__E_0	Error during opening tray
E00M__C_2	EX-CHANGE disc error
E00M__D_0	Error during closing tray
E00M__F_3	EX-OPEN error
E00M__D_5	EX-CLOSE error
E00M__C_2	Chuck-up error
E00M__C_3	Unchucking error

3. Aging mode in Tape Deck section

1) Operation during aging mode

- In the aging mode, the program is executed in the following sequence.

Step	Operation	Display
1	Rewind the TAPE A	TAPE AAG-1
2	Rewind the TAPE B	TAPE BAG-2
3	Play the TAPE A (1 minute)	TAPE AAG-2
4	Stop the TAPE A (1 second)	TAPE AAG-3
5	Play the TAPE A (3 minutes)	TAPE AAG-4
6	Rewind(AMS) the TAPE A	TAPE AAG-5
7	F.F.(AMS) the TAPE A	TAPE AAG-6
8	Play the TAPE B (1 minute)	TAPE BAG-2
9	Stop the TAPE B (1 second)	TAPE BAG-3
10	Record the TAPE B (3 minutes)	TAPE BAG-4
11	Rewind(AMS) the TAPE B	TAPE BAG-5
12	F.F.(AMS) the TAPE B	TAPE BAG-6

2) Error display

- If error occurred, the display remains like "TAPE BAG-2".

4. Exiting from the aging mode

- Be sure to perform Cold Reset to exit from the aging mode.

[GC Test Mode]

- All fluorescent segments and LEDs are tested.
- Keyboard check.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. To enter the test mode, press the three buttons **■**, **GAME EQ** and **DISC 2** simultaneously.
3. All segments and LEDs (without STANDBY LED) are turned on.
4. Press **GAME EQ** and **DISC 2** buttons simultaneously, and the key check mode is activated.
5. The message "KEY 0 0 0 0" is displayed.
Each time a button is pressed, the key code number is displayed.
6. Press **GAME EQ** and **DISC 2** buttons simultaneously, and the key count mode is activated.
7. The message "KEYCNT 0 1" is displayed.
Each time a button is pressed, "KEYCNT 0 1" value increased. However, once a button is pressed, it is no longer taken into account.
8. Press **GAME EQ** and **DISC 2** buttons simultaneously, and the head phone detect mode is activated.
9. The message "H_P OFF" is displayed when a headphone jack is not inserted.
"H_P ON" is displayed when a headphone jack is inserted.
10. Press **GAME EQ** and **DISC 2** buttons simultaneously, and the volume control detect mode is activated.
11. The message "VOLUME FLAT" is displayed.
"VOLUME UP" is displayed if rotating **VOLUME** knob clockwise, or "VOLUME DOWN" is displayed if rotating counterclockwise.
12. To exit from the GC test mode after the volume control detect mode, press **GAME EQ** and **DISC 2** buttons simultaneously.

[Version and Destination Display Mode]

- The version or destination is displayed.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. To enter the test mode, press the three buttons **■**, **GAME EQ** and **MOVIE EQ** simultaneously.
3. The destination is displayed.
4. Press **STOP** and **GROOVE** buttons simultaneously.
5. The version is displayed.
6. To exit from this mode, press **I/⏻** button to turn the set OFF.

[CD Service Mode]

- This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pickup.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. Select the function "CD".
3. To enter the test mode, press three buttons **■**, **GAME EQ**, and **OPEN/CLOSE** simultaneously.
4. The CD service mode is selected.
5. With the CD in stop status, press **▶▶** button to move the pickup to outside track, or press **◀◀** button to inside track.
6. To exit from this mode, perform as follows:
 - 1) Move the pickup to the most inside track.
 - 2) Press **I/⏻** button to turn the set OFF.

- Note:**
- Always move the pickup to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
 - Do not run the sled motor excessively, otherwise the gear can be chipped.

[MC Test Mode]

- This mode is used to test the function of the equalizer.

Procedure:

1. Press **I/⏻** button to turn the set ON.
2. To enter the test mode, press the three buttons **■**, **GAME EQ** and **DISC 3** simultaneously.
3. Press the **MOVIE EQ** button.
The function of the equalizer is set to "MIN".
4. Press the **MUSIC EQ** button.
The function of the equalizer is set to "MAX".
5. Press the **P.FILE** button.
The function of the equalizer is set to "FLAT".
6. To exit from this mode, press **I/⏻** button to turn the set OFF.

[CD Ship Mode (No Memory Clear)]

- This mode moves the pickup to the position durable to vibration. Use this mode when returning the set to the customer after repair.

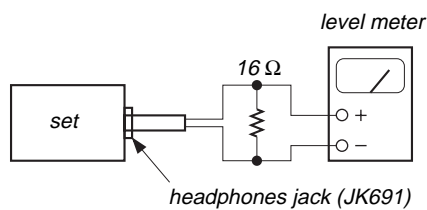
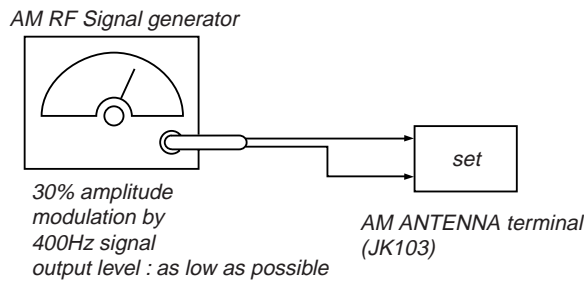
Procedure:

1. Press **I/⏻** button to turn the set ON.
2. Select the function "CD".
3. Press **I/⏻** button to turn the set OFF.
4. Press **CD** button and **I/⏻** button simultaneously.
5. The "STANDBY" display blinks instantaneously, and the CD ship mode is set.

SECTION 4 ELECTRICAL ADJUSTMENTS

TUNER SECTION

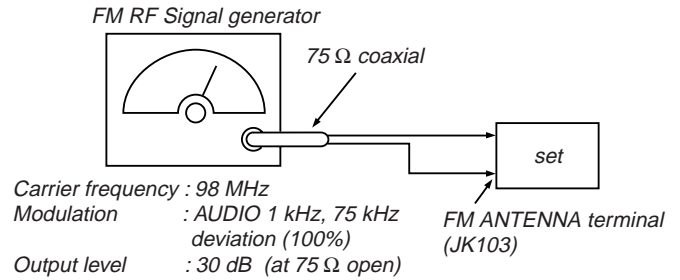
AM IF Adjustment



Procedure:

1. Set the frequency of the AM RF signal generator to 1000 kHz (at 10 kHz step) or 999 kHz (at 9 kHz step).
2. Tune the set to AM 1000 kHz (at 10 kHz step) or 999 kHz (at 9 kHz step).
3. Adjust IFT101 so that the reading on level meter becomes in maximum.

FM Tuned Level Adjustment

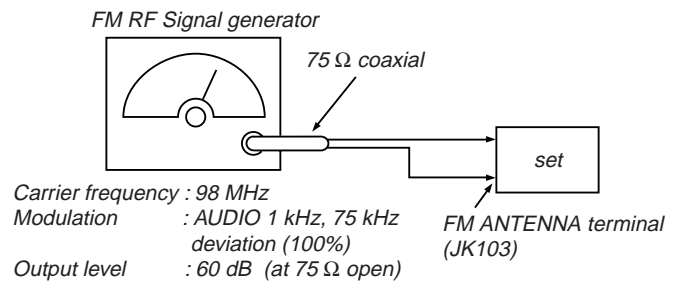


Procedure:

1. Supply a 98 MHz signal at 28 dB from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV101 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: MAIN board

Null Adjustment

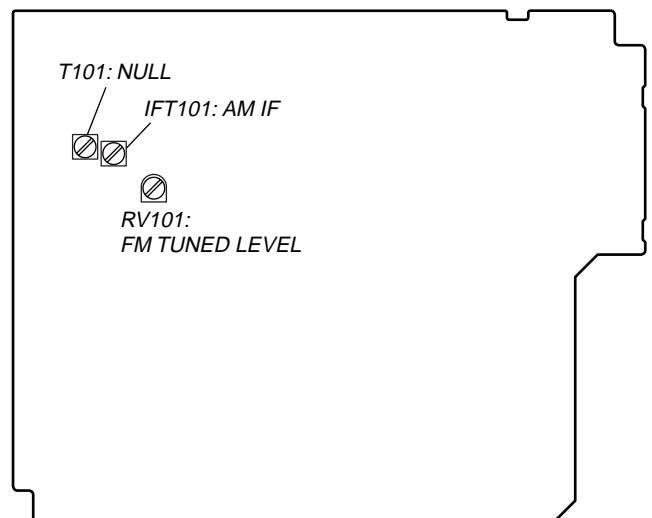


Procedure:

1. Supply a 98 MHz signal at 60 dB from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Measure voltage between pin 21 and pin 23 of IC 101. Adjust T101 until the voltage becomes 0 V.

Adjustment Location: MAIN board

[MAIN BOARD] Component side

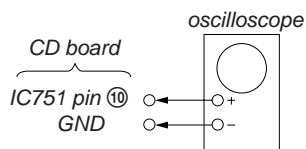


CD SECTION

Note :

1. CD Block is basically designed to operate without adjustment.
Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent
when the signal level is low than specified value with the
following checks.

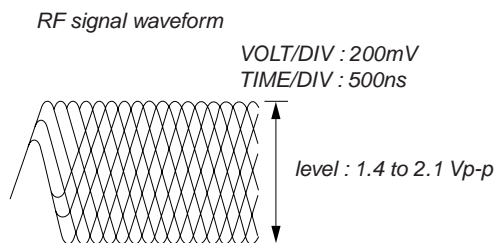
RF Level Check



Procedure :

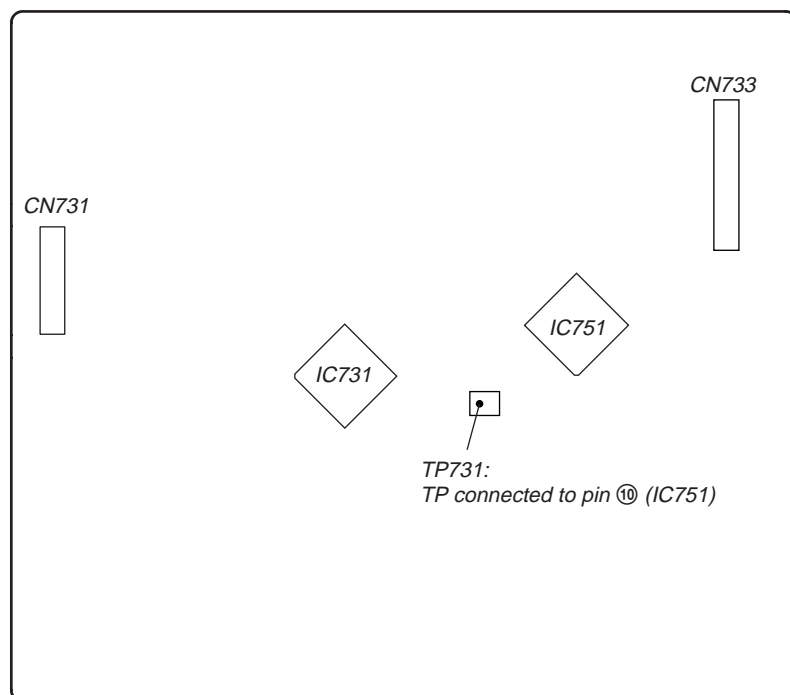
1. Connect oscilloscope to pin ⑩ (IC751).
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal
level is correct or not.

Note : Clear RF signal waveform means that the shape “◇” can be clearly
distinguished at the center of the waveform.



Adjustment Location: CD board

[CD BOARD] (Component Side)



SECTION 5
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note on Schematic Diagram:

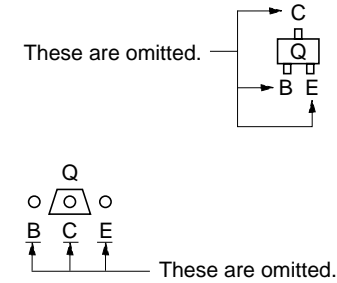
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4} \text{ W}$ or less unless otherwise specified.
- \triangle : internal component.
- \square : panel designation.

Note:
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

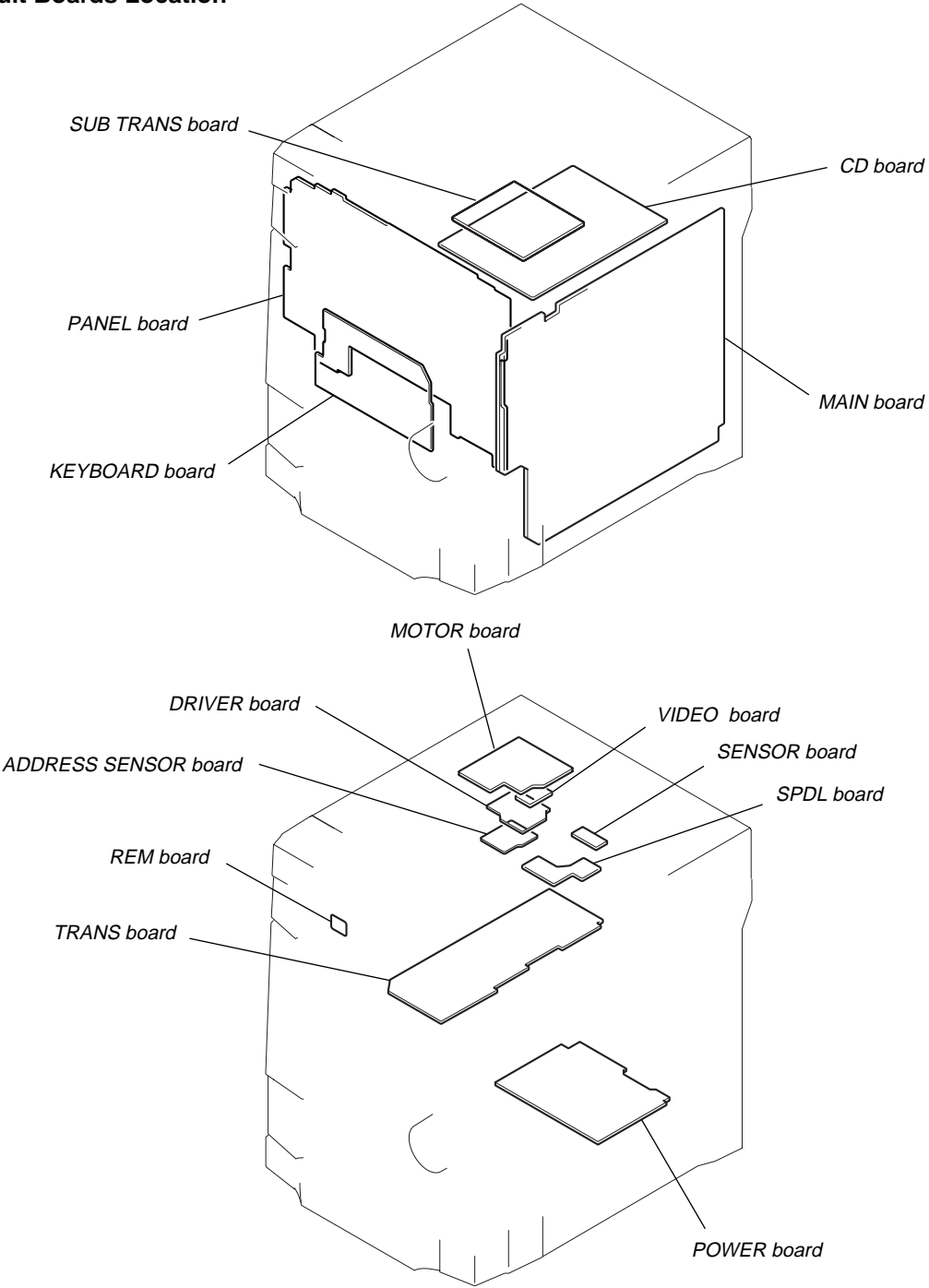
Note on Printed Wiring Boards:

- \circ : parts extracted from the component side.
- \square : Pattern from the side which enables seeing.
- Indication of transistor.

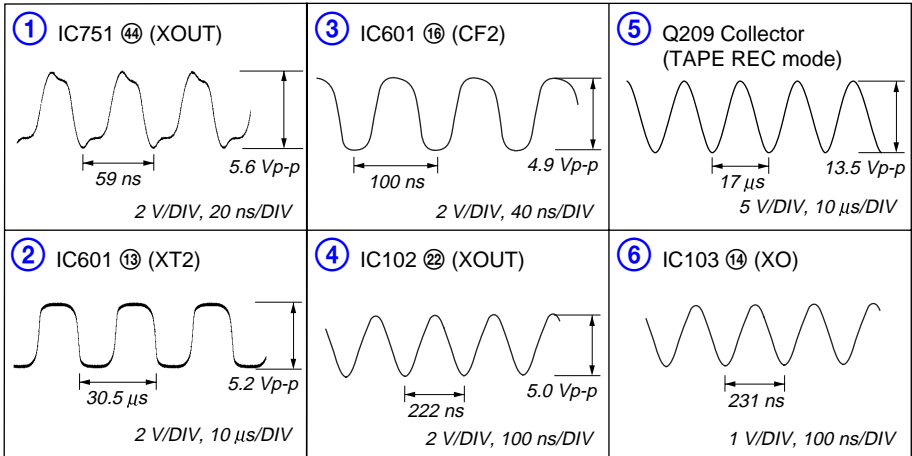


- --- : B+ Line.
- --- : B- Line.
- \square : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
no mark : FM
< : CD
[] : TAPE
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 \Rightarrow : FM
 \Rightarrow : PB (DECK A)
 \Rightarrow : PB (DECK B)
 \Rightarrow : REC (DECK B)
 \Rightarrow : CD
- Abbreviation
AR : Argentina model
AUS : Australian model
E2 : 120V AC area in E model
E51 : 220V AC area in E model
EA : Saudi Arabia model
MX : Mexican model
SP : Singapore model
TH : Thai model
TW : Taiwan model

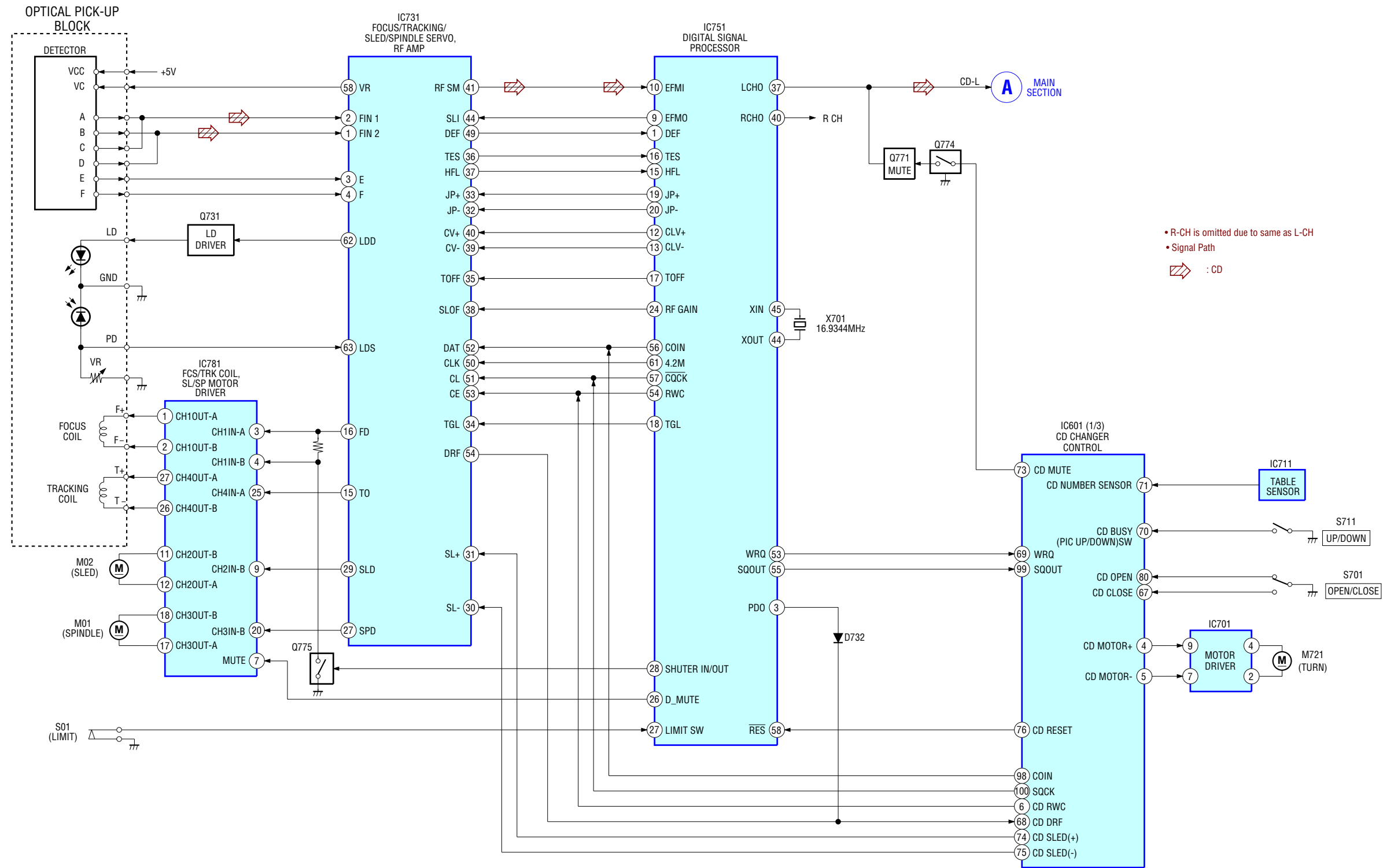
5-1. Circuit Boards Location



• Waveforms



5-2. Block Diagrams
CD Section

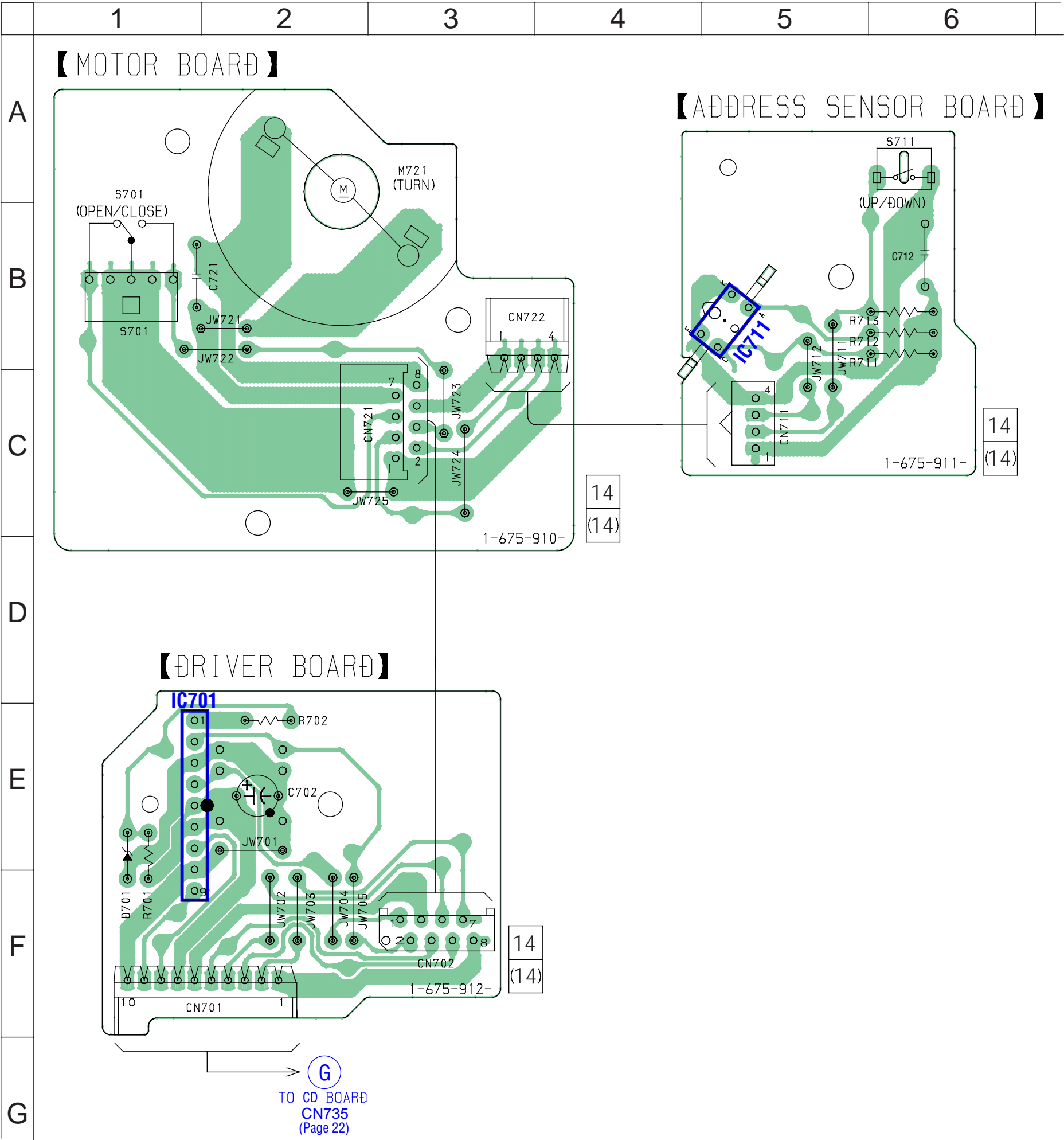


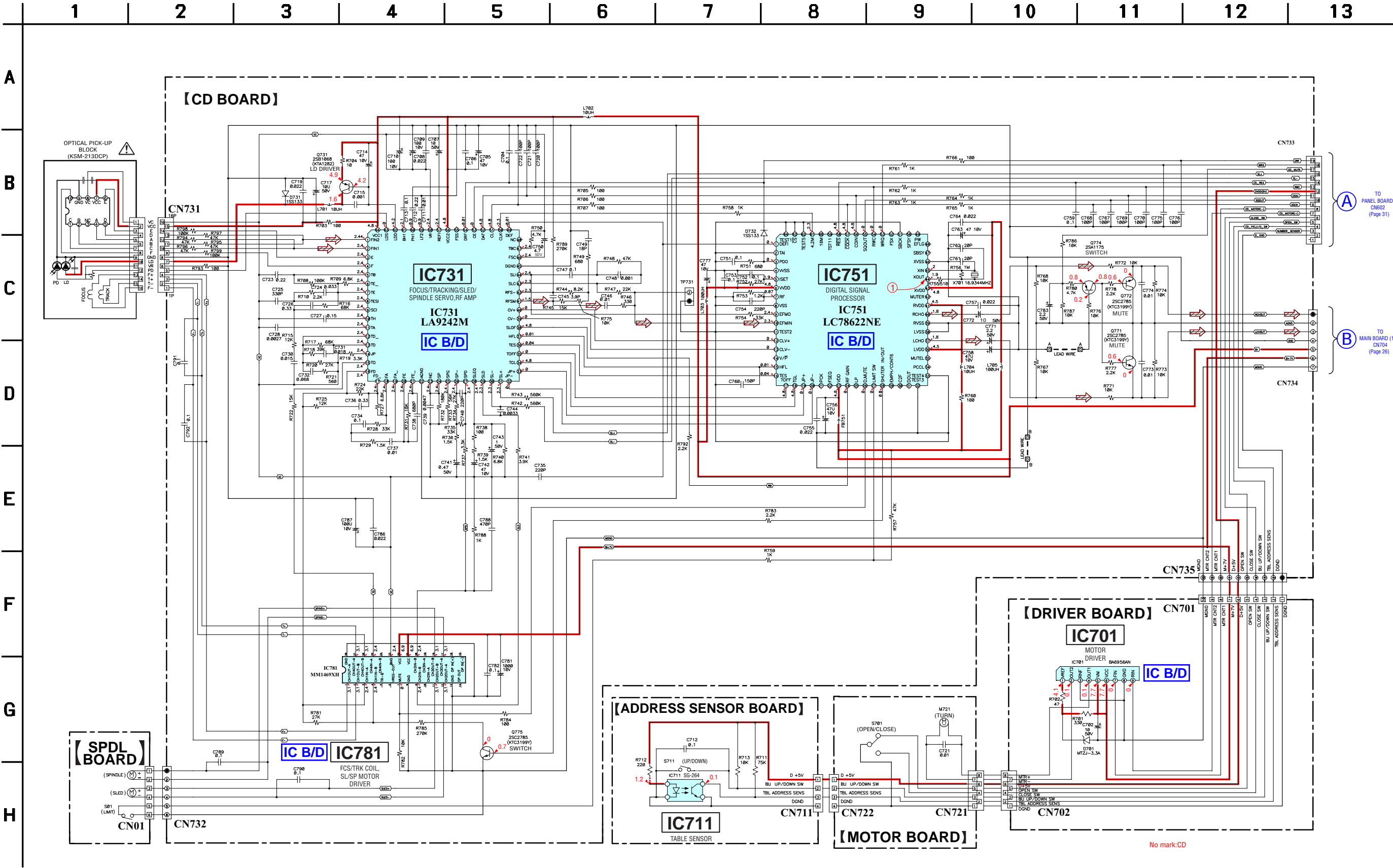


5-3. Printed Wiring Boards – CD Section (1/2) – • See page 19 for Circuit Boards Location.

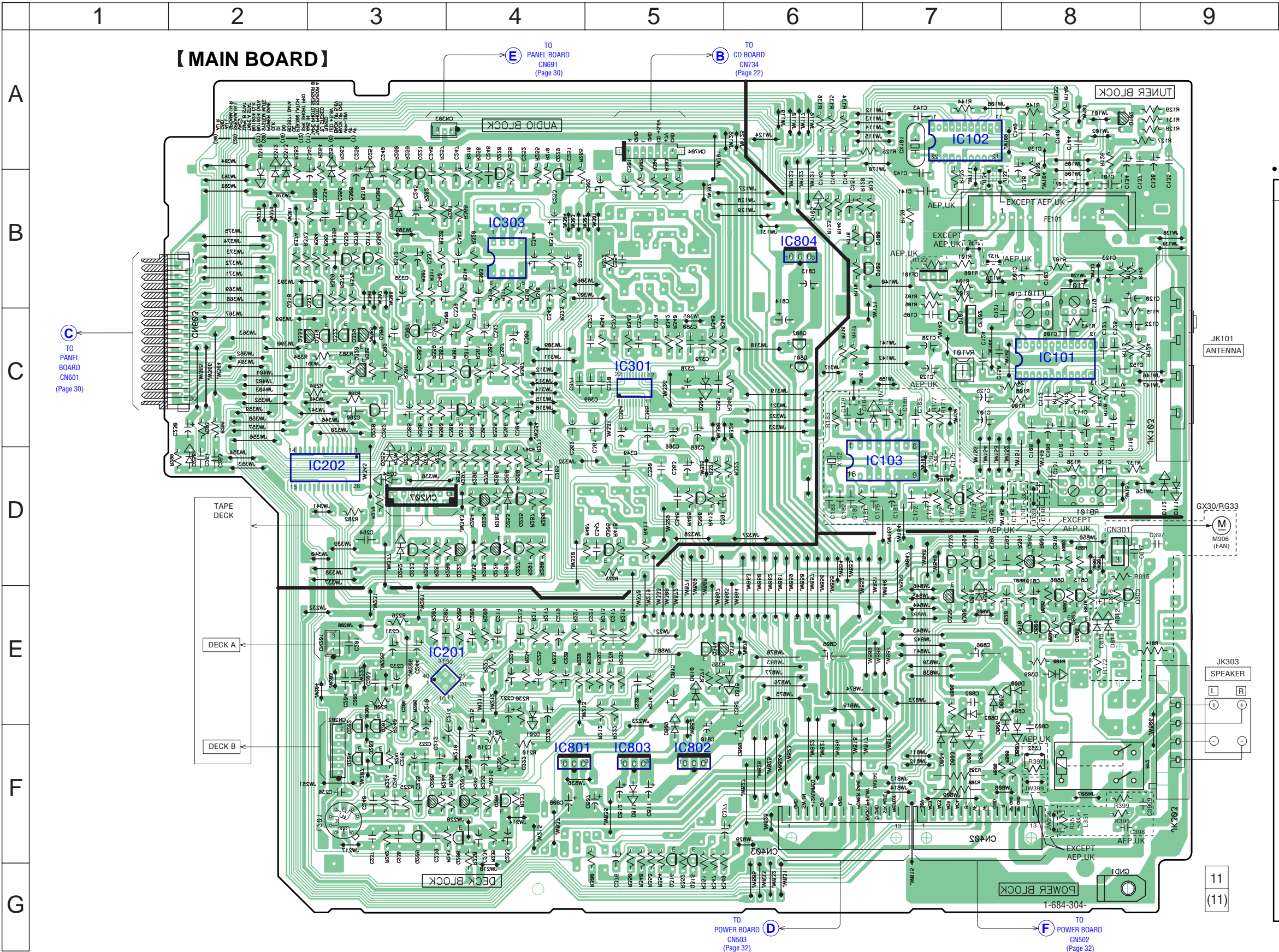


5-4. Printed Wiring Boards – CD Section (2/2) – • See page 19 for Circuit Boards Location.





5-6. Printed Wiring Board – MAIN Board – • See page 19 for Circuit Boards Location.

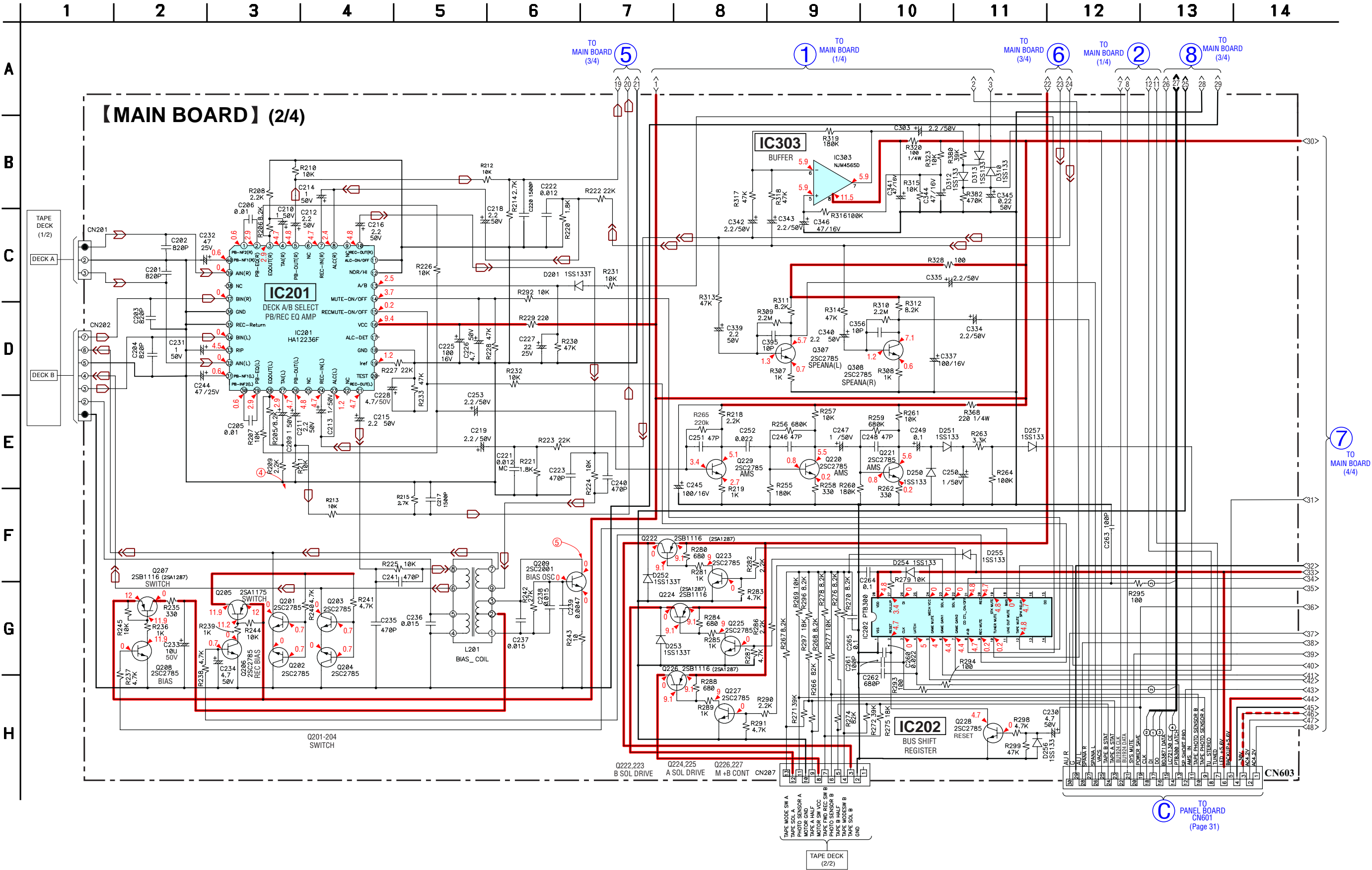


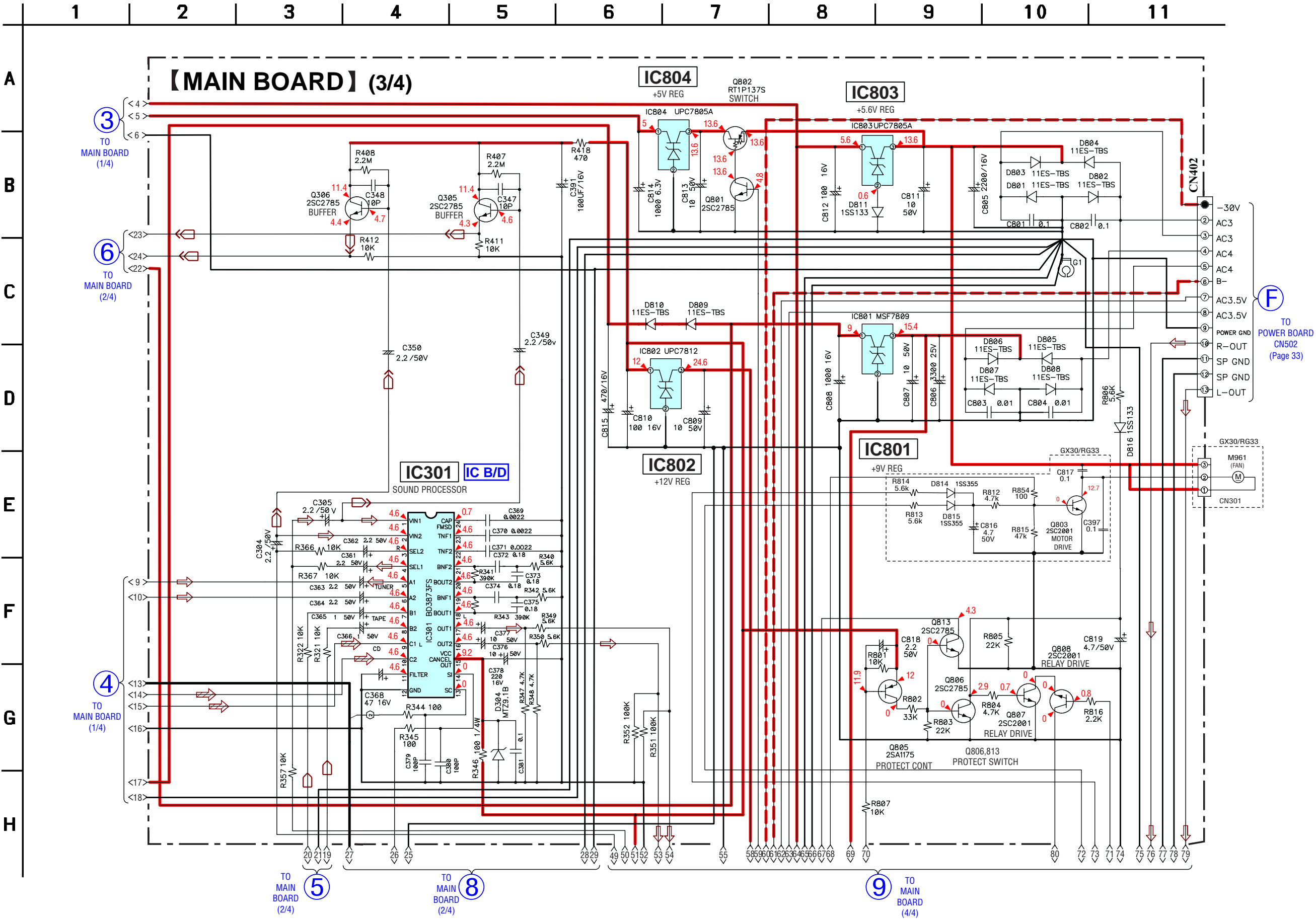
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D105	B-6	Q202	E-3
D111	D-9	Q203	F-3
D112	D-9	Q204	F-3
D201	F-4	Q205	F-3
D250	B-3	Q206	F-4
D251	A-3	Q207	F-4
D252	D-3	Q208	F-4
D253	D-4	Q209	F-3
D254	D-3	Q220	A-4
D255	D-3	Q221	A-3
D256	D-2	Q222	D-4
D257	A-3	Q223	D-3
D304	C-5	Q224	D-4
D309	E-8	Q225	D-4
D310	A-2	Q226	D-4
D312	A-2	Q227	D-4
D313	A-2	Q228	C-3
D315	E-6	Q229	A-4
D801	F-7	Q305	D-5
D802	E-7	Q306	D-5
D803	E-7	Q307	C-3
D804	F-7	Q308	B-3
D805	E-8	Q311	C-4
D806	E-8	Q312	C-4
D807	F-8	Q313	E-6
D808	E-8	Q314	E-5
D809	E-5	Q315	G-5
D810	E-5	Q316	G-5
D811	F-5	Q317	B-3
D814	E-8	Q318	B-2
D815	E-8	Q319	C-3
D816	D-7	Q320	B-3
		Q321	B-3
		Q322	C-3
IC101	C-8	Q328	C-3
IC102	A-7	Q329	C-3
IC103	D-7	Q330	E-7
IC201	E-4	Q331	D-7
IC202	D-3	Q332	D-7
IC301	C-5	Q333	C-2
IC303	B-4	Q801	C-6
IC801	F-4	Q802	C-6
IC802	F-5	Q803	E-8
IC803	F-5	Q805	D-8
IC804	B-6	Q806	D-8
		Q807	E-8
Q101	C-7	Q808	E-8
Q102	A-8	Q809	E-8
Q105	B-7	Q810	E-8
Q106	B-7	Q813	D-8
Q107	D-7		
Q201	E-3		

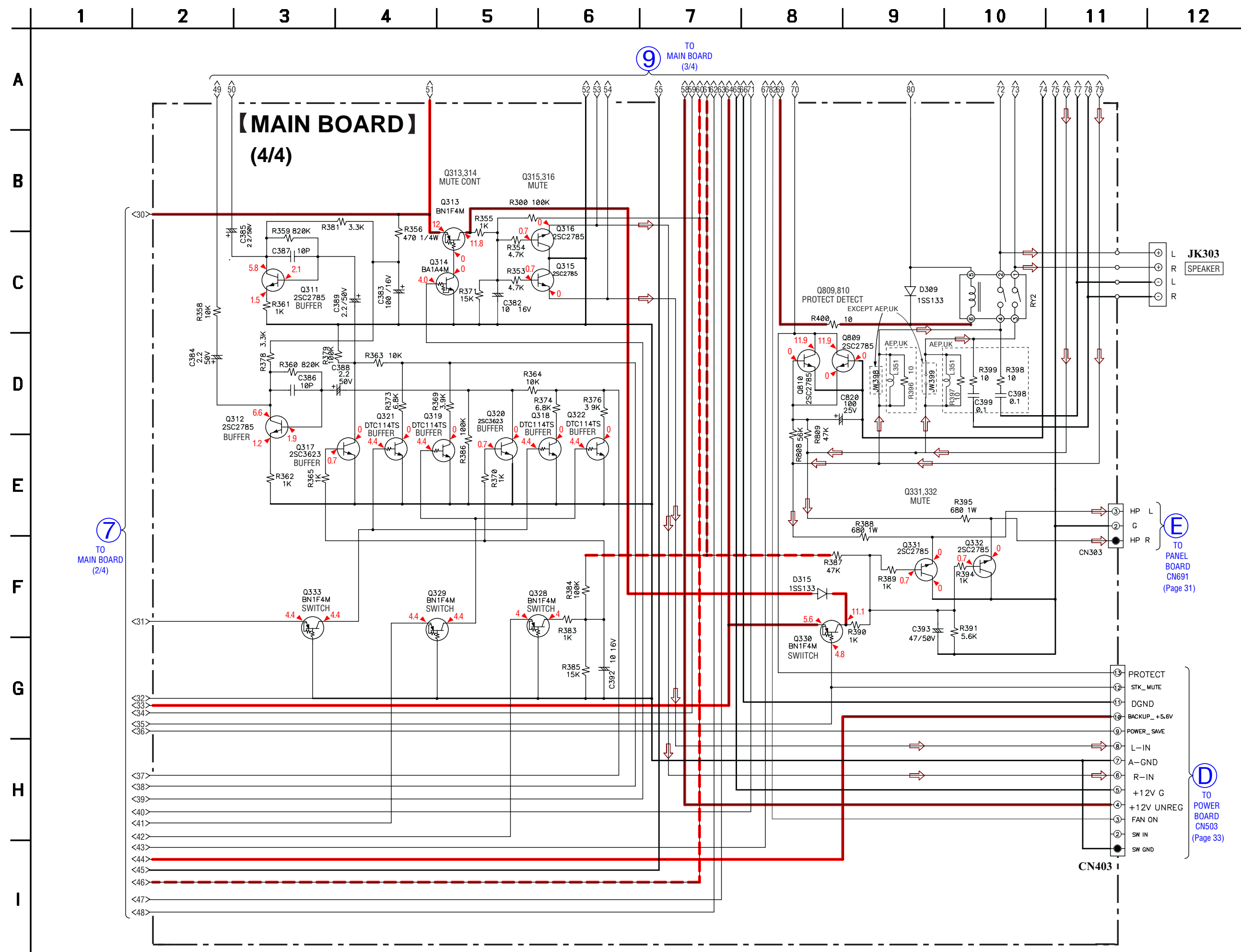


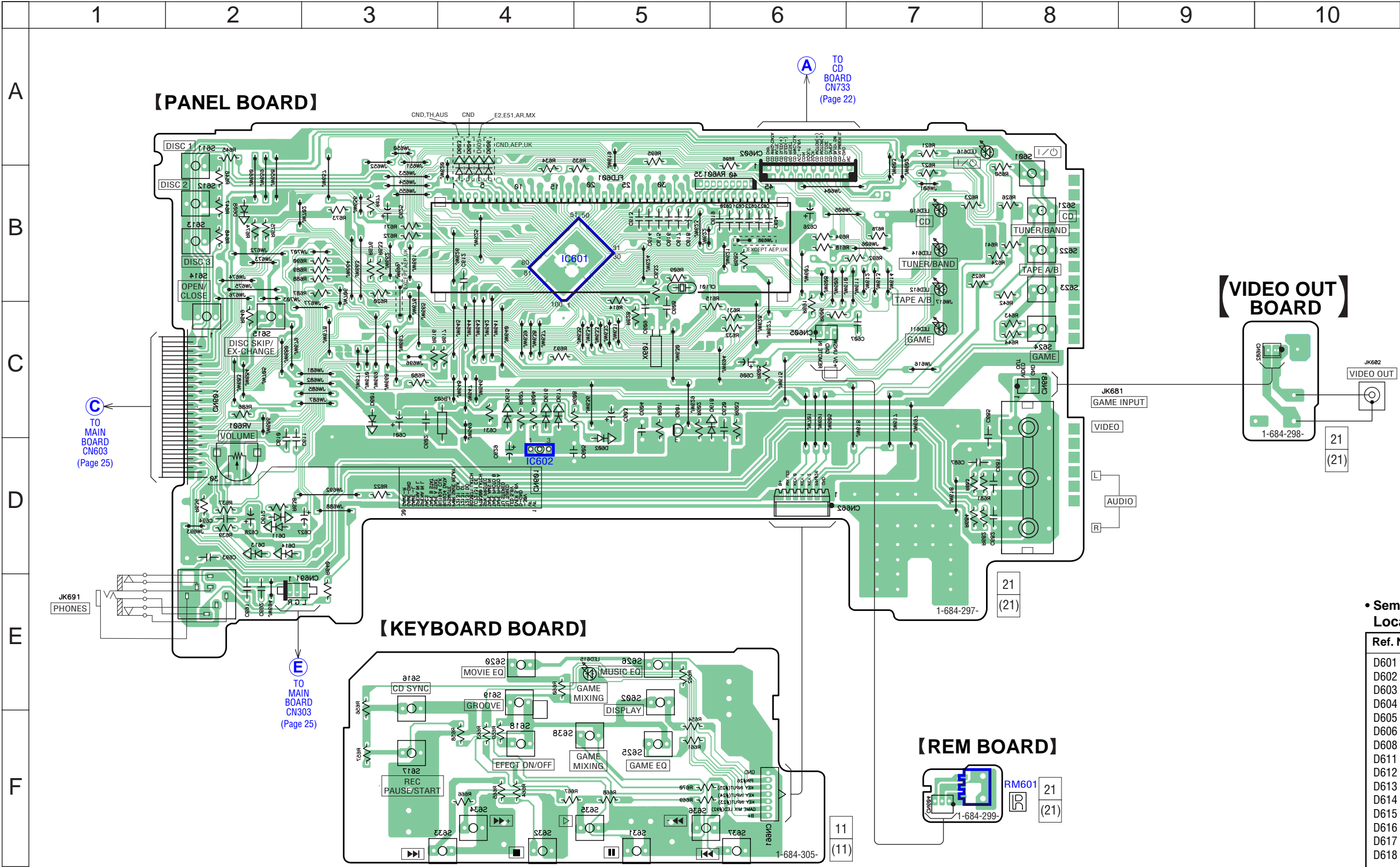
5-8. Schematic Diagram – MAIN Board (2/4) – • See page 19 for Waveforms.





5-10. Schematic Diagram – MAIN Board (4/4) –

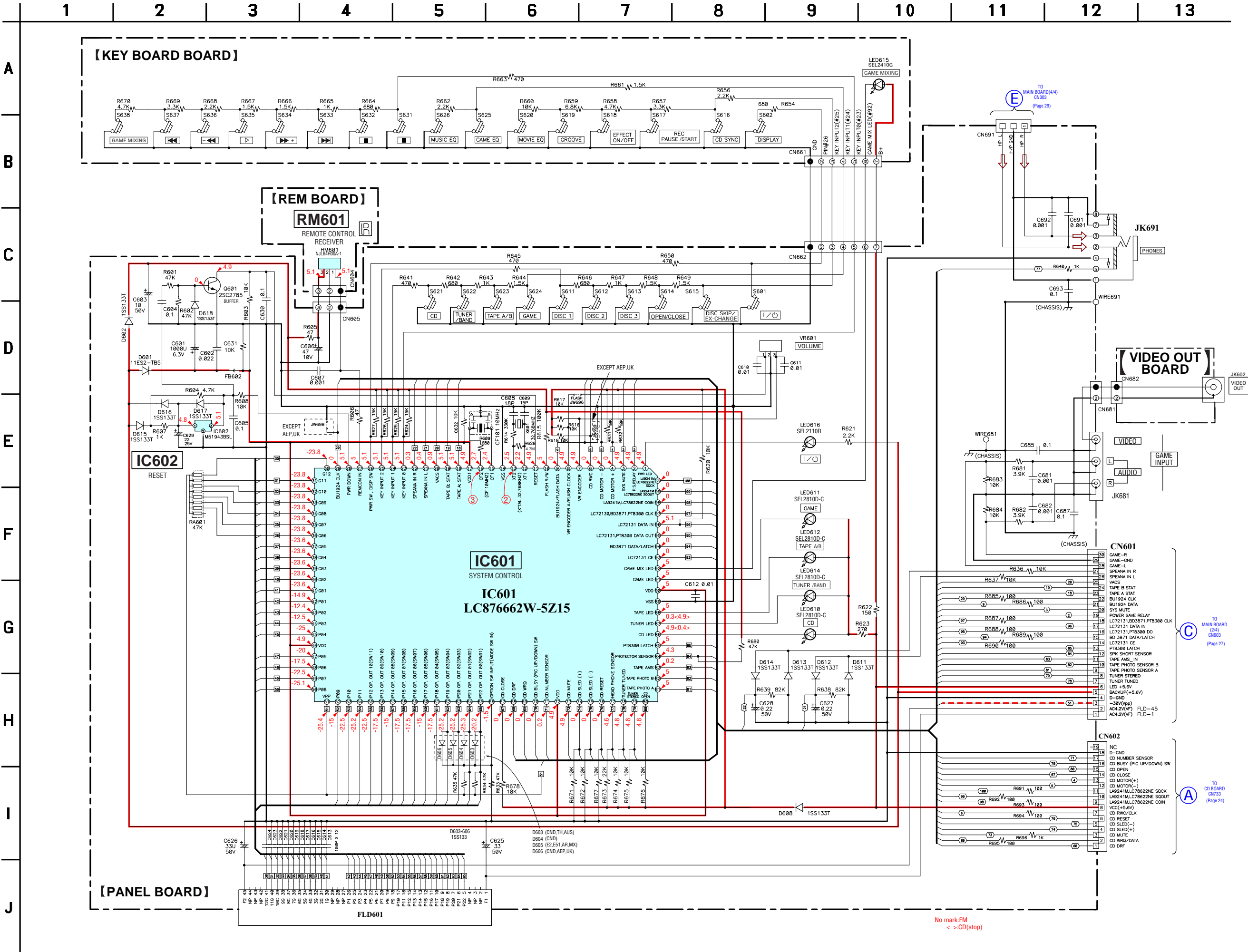




• Semiconductor Location

Ref. No.	Location
D601	C-3
D602	C-5
D603	A-4
D604	A-4
D605	A-4
D606	A-4
D608	B-2
D611	D-2
D612	D-2
D613	D-2
D614	D-2
D615	C-4
D616	C-4
D617	C-4
D618	C-6
IC601	B-4
IC602	D-4
LED610	B-7
LED611	C-7
LED612	B-7
LED614	B-7
LED615	E-5
LED616	A-7
Q601	C-5
RM601	F-8

5-12. Schematic Diagram – PANEL Section – • See page 36 for IC Pin Function Description. • See page 19 for Waveforms.

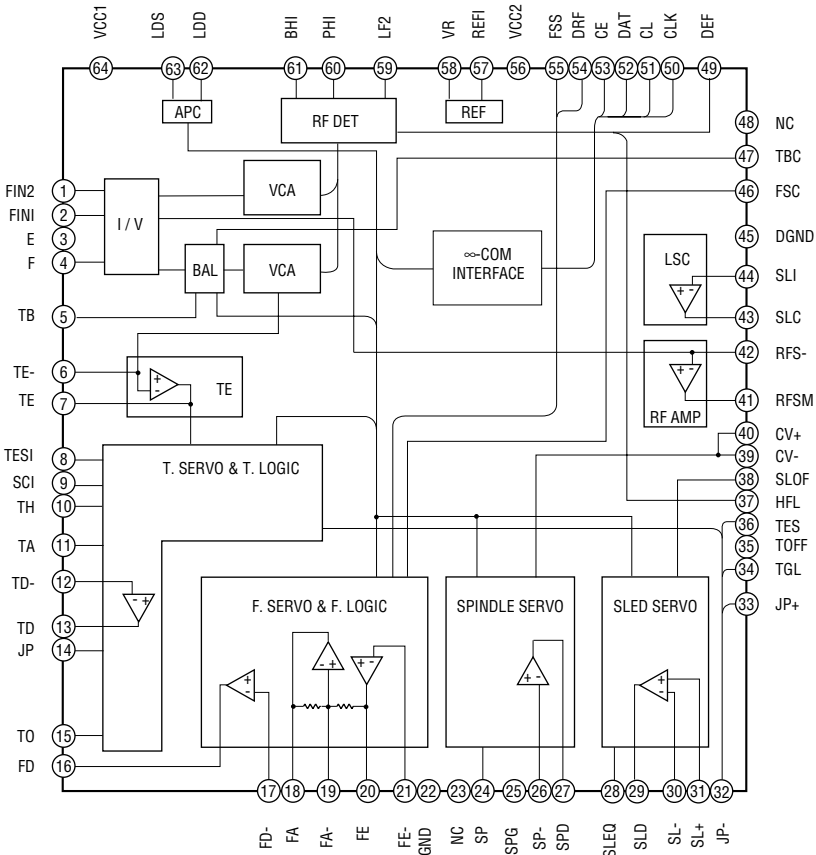




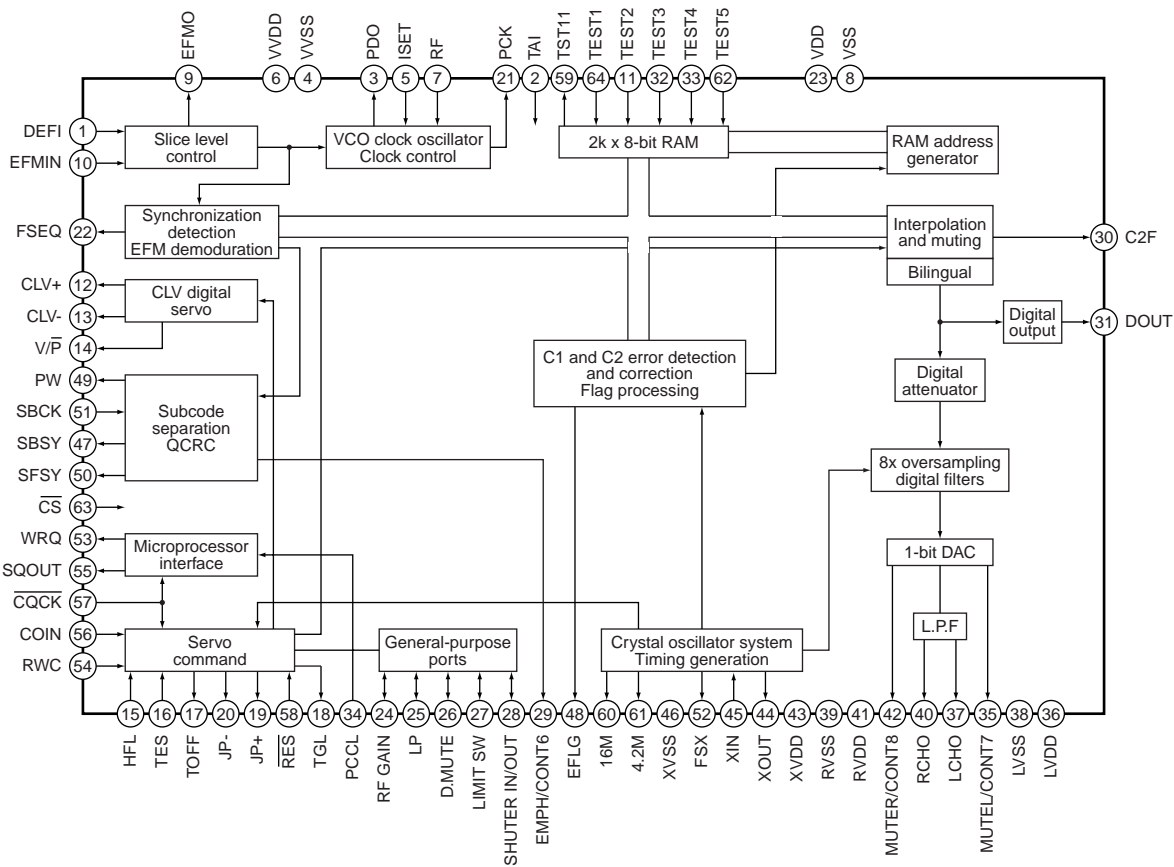


IC Block Diagrams

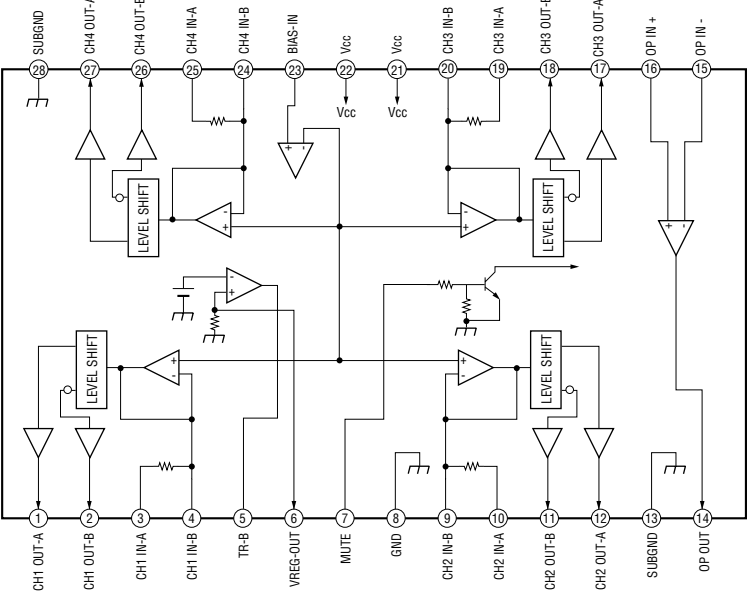
IC731 LA9242M (CD BOARD)



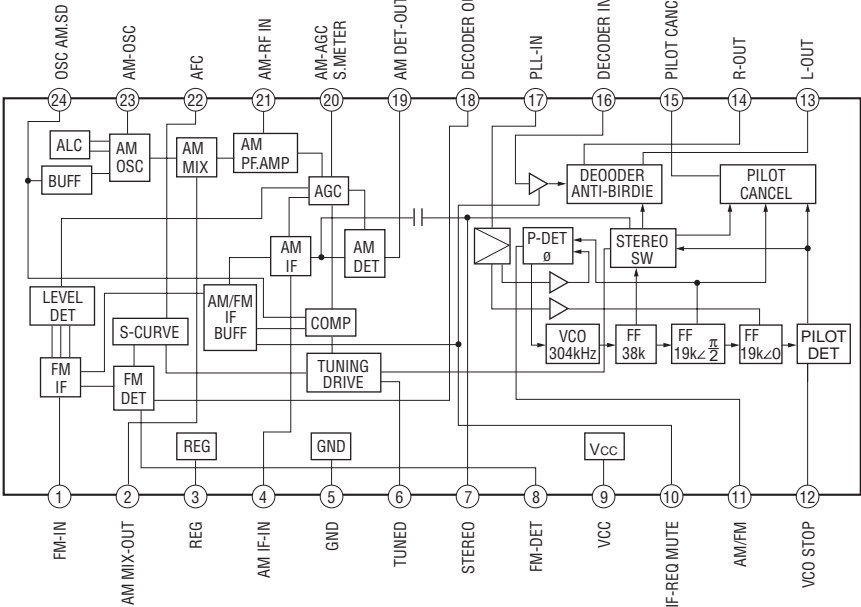
IC751 LC78622NE (CD BOARD)



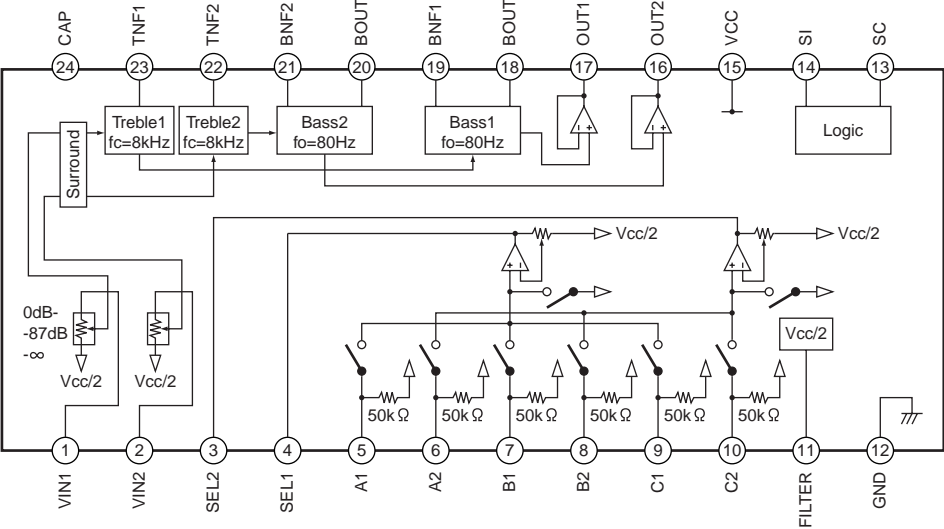
IC781 MN1469XH (CD BOARD)



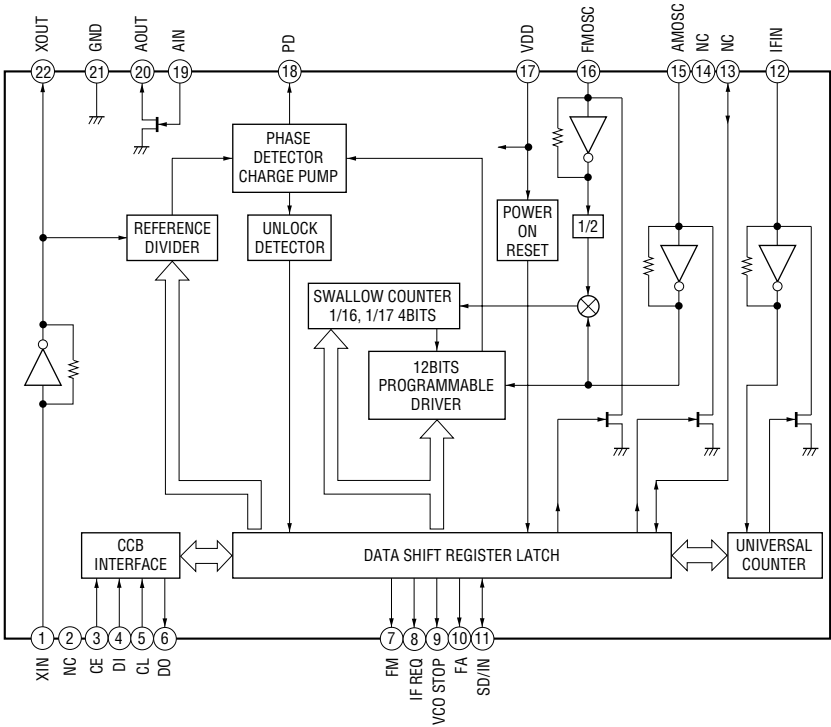
IC101 LA1845 (MAIN BOARD)



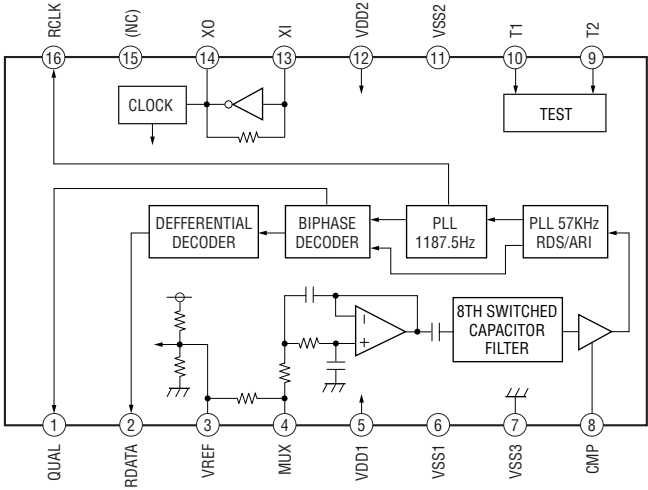
IC301 BD3873FS (MAIN BOARD)



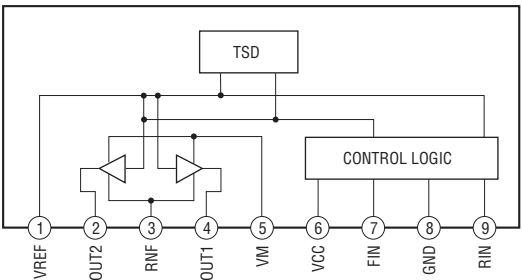
IC102 LC72131D (MAIN BOARD)



IC103 BU1924



IC701 BA6956AN (DRIVER BOARD)



5-15. IC Pin Function Description

• IC601 LC876662W-5Z15 Master Control (PANEL Board)

Pin No.	Pin Name	I/O	Description
1	PWR LED	O	PWR LED control signal output
2	P.S.RELAY	O	Standby relay control signal output
3	SYS MUTE	O	System muting signal output
4	CD MOTOR +	O	CD changer motor control signal output
5	CD MOTOR –	O	CD changer motor control signal output
6	CD RWC	O	Read/write control signal output
7	VR ENCODER B	I	Volume signal input from the rotary encoder
8	VR ENCODER A	I	Volume signal input from the rotary encoder
9	BU1924/FLASH DATA	I	Data input from the RDS decoder IC
10	FLASH R/W	–	Fixed at “H”
11	RESET	I	Reset input
12	XT1	I	Connection for a crystal resonator
13	XT2	O	Connection for a crystal resonator
14	VSS	–	Ground
15	CF1	I	Connection for a ceramic resonator
16	CF2	O	Connection for a ceramic resonator
17	VDD1	–	Power supply
18	TAPE A: STAT	I	TAPE A switches signal input
19	TAPE B: STAT	I	TAPE B switches signal input
20	VACS	O	VACS control signal output
21	SPEANA IN L	I	Spectrum analyzer signal input
22	SPEANA IN R	I	Spectrum analyzer signal input
23	KEY INPUT 0	I	Function key input
24	KEY INPUT 1	I	Function key input
25	KEY INPUT 2	I	Function key input
26	PWR SW, DISP SW	I	POWER switch or DISP switch key input
27	REMOCON IN	I	Data input from the remote control receiver
28	PWR DOWN	I	Power down signal input
29	BU1924 CLK	I	Clock input from the RDS decoder IC
30 to 41	G12 to G01	O	FL tube grid signal output
42 to 45	P01 to P04	O	FL tube segment signal output
46	VDD	–	Power supply
47 to 54	P05 to P11	O	FL tube segment signal output
55 to 65	P12 OP. OUT 10(SW11) to P22 OP. OUT 00(SW01)	O	FL tube segment signal output or switch signal output
66	OPTION SW INPUT	I	Switch signal input
67	CD CLOSE	I	CD tray close switch signal input
68	CD DRF	I	RF level detection signal input
69	CD WRQ	I	Subcode Q standby signal input
70	CD BUSY (PIC UP/DOWN)SW	I	CD BU up/down switch signal input
71	CD NUMBER SENSOR	I	Table address sensor switch signal input
72	VDD	–	Power supply
73	CD MUTE	O	CD audio muting signal output
74	CD SLED (+)	O	Sled motor control signal output
75	CD SLED (–)	O	Sled motor control signal output
76	CD RESET	O	CD reset signal output
77	HEAD PHONE SENSOR	I	Headphone detection signal input
78	TUNER TUNED	I	Tuning a frequency signal input

Pin No.	Pin Name	I/O	Description
79	TUNER STEREO	I	Stereo tuning signal input
80	CD OPEN	I	CD tray open switch signal input
81	TAPE PHOTO A	I	A deck photo sensor signal input
82	TAPE PHOTO B	I	B deck photo sensor signal input
83	TAPE AMS	I	AMS signal input
84	PROTECTOR SENSOR	I	Power amplifier circuit protection signal input
85	PT8300 LATCH	O	Latch signal output to the I/O expander
86	CD LED	O	CD LED control signal output
87	TUNER LED	O	TUNER LED control signal output
88	TAPE LED	O	TAPE LED control signal output
89	VSS	–	Ground
90	VDD	–	Power supply
91	GAME LED	O	GAME LED control signal output
92	GAME MIX LED	O	GAME MIX LED control signal output
93	LC72131 CE	O	Chip select signal output to the PLL tuner IC
94	BD3871 DATA/LATCH	O	Data/latch signal output to the sound processor
95	LC72131,PT8300 DATA OUT	O	Data output to the PLL tuner IC and the I/O expander
96	LC72131 DATA IN	I	Data input from the PLL tuner IC
97	LC72131,BD3871, PT8300 CLK	O	Clock output to the PLL tuner IC, the sound processor and the I/O expander
98	LA9241M,LC78622NE COIN	O	CD command data signal output
99	LA9241M,LC78622NE SQOUT	I	CD subcode Q signal input
100	LA9241M,LC78622NE SQCK	O	CD command clock signal output

SECTION 6
EXPLODED VIEWS

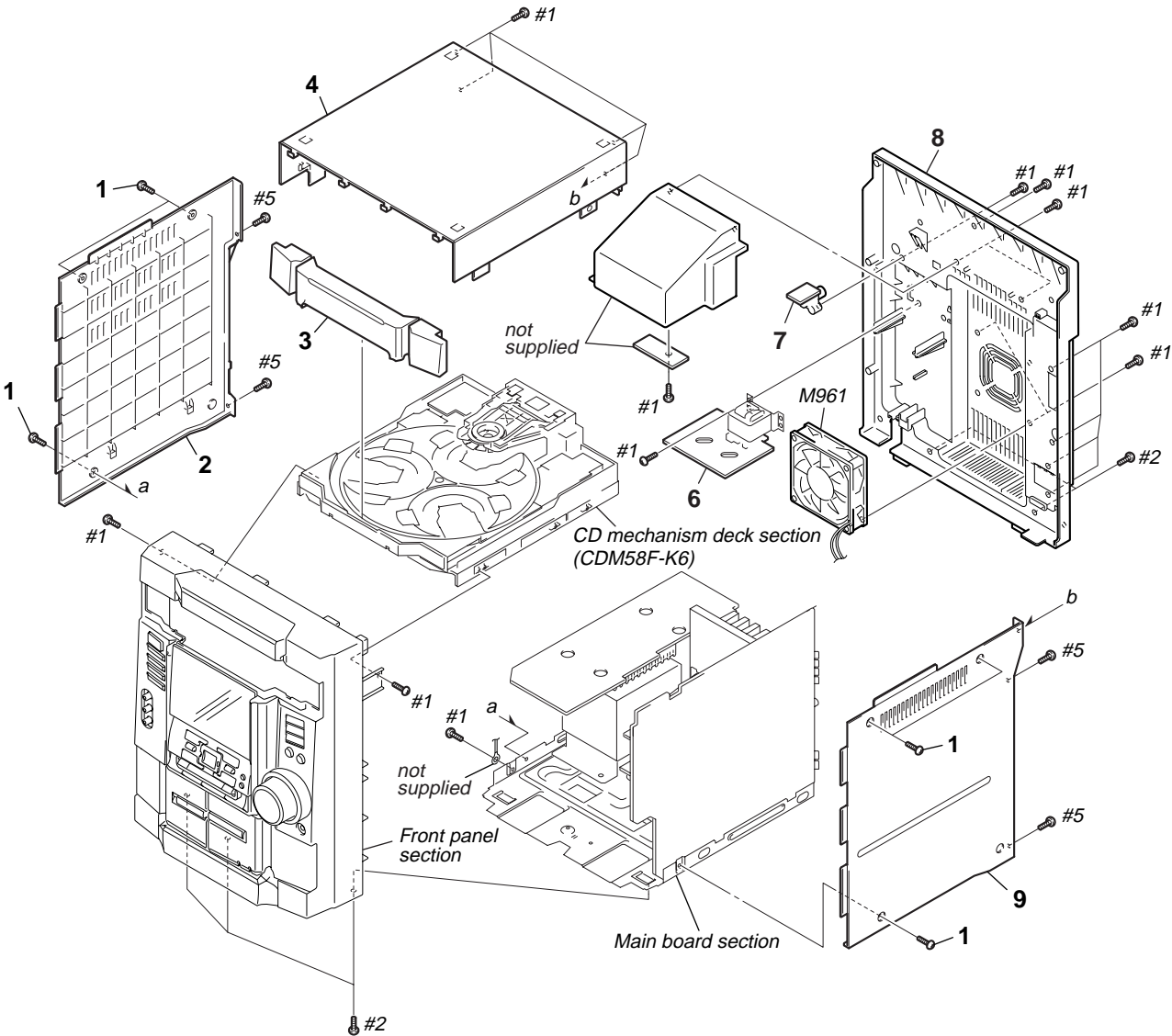
- NOTE:
- XX, -X mean standardized parts, so they may have some differences from the original one.
 - Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - The mechanical parts with no reference number in the exploded views are not supplied.

- Abbreviation
 - AR : Argentina model
 - AUS : Australian model
 - E2 : 120V AC area in E model
 - E51 : 220V AC area in E model
 - EA : Saudi Arabia model
 - MX : Mexican model
 - SP : Singapore model
 - TH : Thai model
 - TW : Taiwan model

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

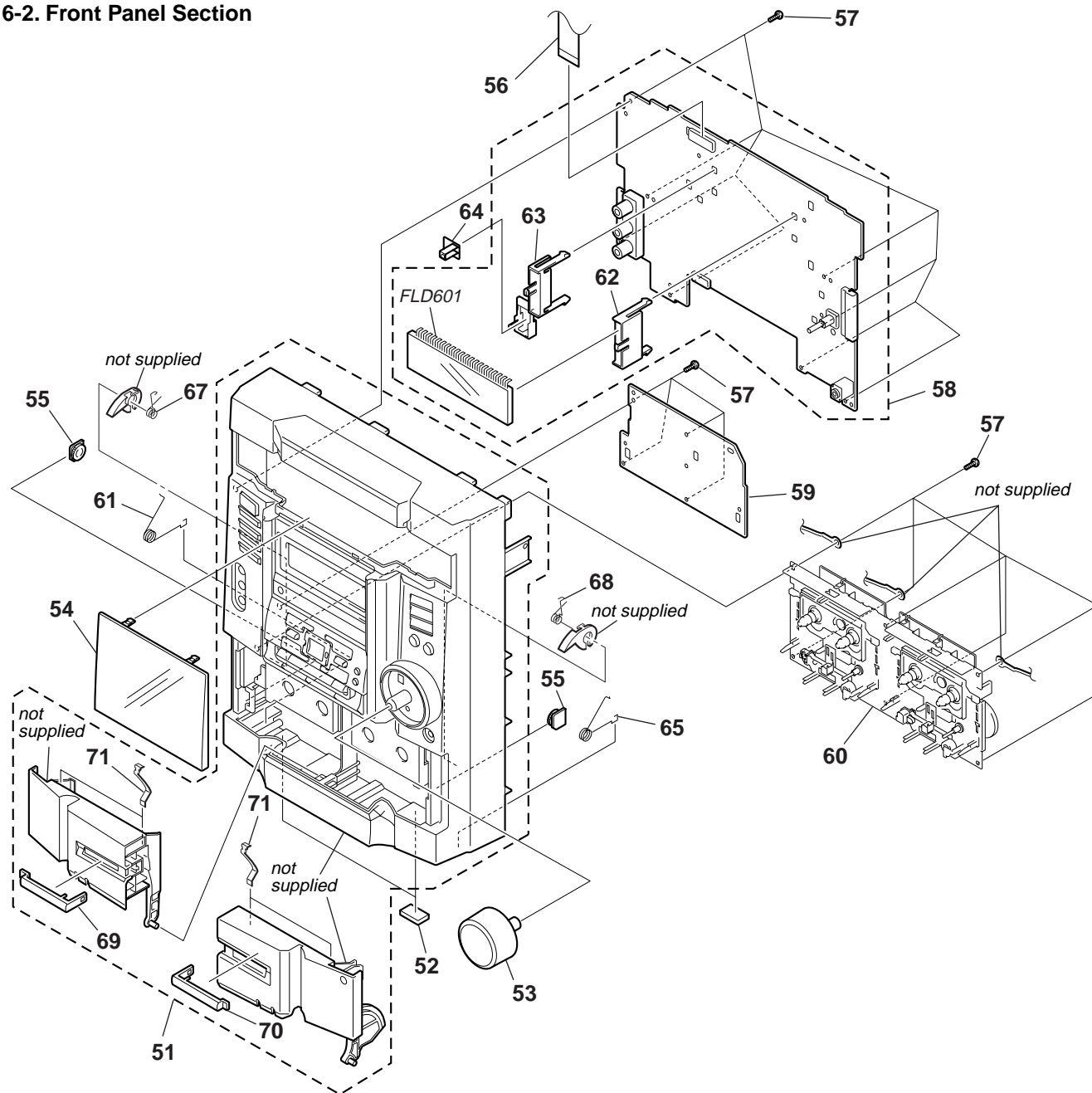
Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. Main Section



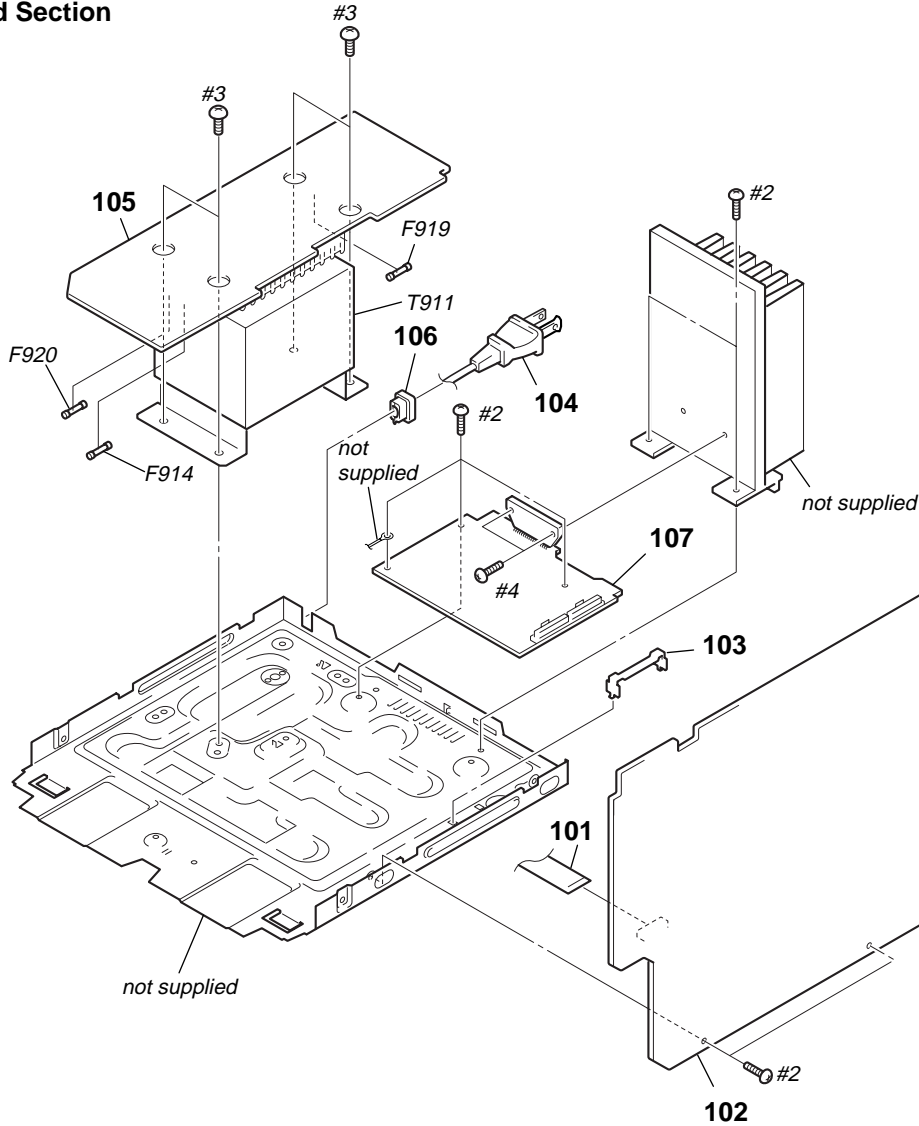
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-363-099-41	SCREW (CASE 3 TP2)		8	4-234-701-21	BACK PANEL	
2	4-224-549-21	CASE (SIDE-L)				(RG22:E2,E51,SP,EA,TH,TW/RG33:E2,E51)	
3	4-238-616-01	CD DOOR		8	4-234-701-31	BACK PANEL (RG22:AUS,MX,AR)	
4	4-224-550-41	CASE (TOP) (RG22:AEP,UK/RG33:AEP,UK)		8	4-234-701-41	BACK PANEL (GX30/RG33:MX,AR)	
4	4-224-550-81	CASE (TOP)		9	4-224-548-61	CASE (SIDE-R)	
	(GX30/RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51,MX,AR)			M961	1-763-738-21	FAN, DC (GX30/RG33)	
6	1-684-302-21	SUB TRANS BOARD		#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
7	1-684-298-21	VIDEO OUT		#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
8	4-234-701-11	BACK PANEL (RG22:AEP,UK/RG33:AEP,UK)		#5	7-685-872-09	SCREW +BVTT 3X8 (S)	

6-2. Front Panel Section



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	A-4722-475-A	PANEL ASSY, FRONT (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51)		58	A-4729-766-A	PANEL BOARD, COMPLETE (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51)	
51	A-4746-787-A	PANEL ASSY, FRONT (GX30/RG22:AEP,UK/RG33:AEP,UK,MX,AR)		58	A-4676-626-A	PANEL BOARD, COMPLETE (GX30/RG33:MX,AR)	
52	4-233-980-01	RUBBER FOOT		59	1-684-305-21	KEYBOARD BOARD	
53	4-234-019-01	VOLUME KNOB (GX30/RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51,MX,AR)		60	1-796-360-11	DECK, MECH (CWL43FF48)	
53	4-234-019-21	VOLUME KNOB (RG22:AEP,UK/RG33:AEP,UK)		61	4-239-346-01	CASSETTE DOOR SPRING (L)	
54	4-238-609-01	DISPLAY WINDOW (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW)		62	4-238-614-01	FL HOLDER R	
54	4-238-609-21	DISPLAY (WINDOW) (RG22:AEP,UK)		63	4-238-613-01	FL HOLDER L	
54	4-238-609-31	DISPLAY (WINDOW) (RG33:AEP,UK)		64	1-684-299-21	REM BOARD	
54	4-238-609-41	DISPLAY (WINDOW) (RG33:E2,E51)		65	4-239-347-01	CASSETTE DOOR SPRING (R)	
54	4-238-609-51	DISPLAY (WINDOW) (GX30/RG33:MX,AR)		67	4-231-836-01	SPRING (HEART CAM-A)	
55	4-224-104-41	DAMPER		68	4-231-841-01	SPRING (HEART CAM-B)	
56	1-773-119-11	WIRE (FLAT TYPE) (19 CORE)		69	4-238-619-01	CASS WINDOW A	
57	4-218-254-21	SCREW (M2.6), +PTPWH		70	4-238-620-01	CASS WINDOW B	
58	A-4729-718-A	PANEL BOARD, COMPLETE (RG22:AEP,UK/RG33:AEP,UK)		71	4-238-631-01	TAPE SPRING	
				FLD601	1-518-792-11	INDICATOR TUBE, FLUORESCENT	

6-3. MAIN Board Section

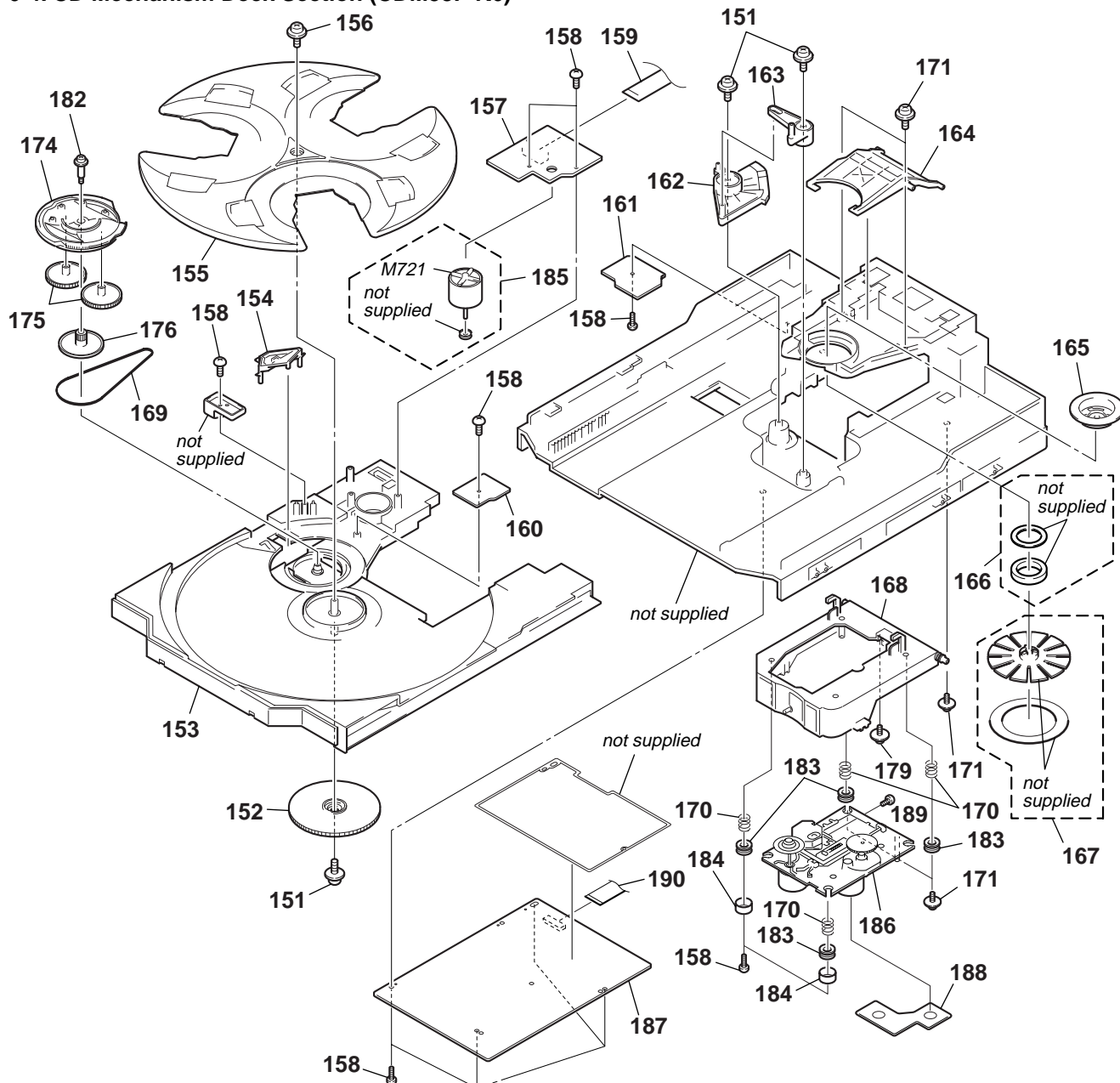


Ref. No.	Part No.	Description	Remarks
101	1-751-688-11	WIRE (FLAT TYPE) (13 CORE)	
102	A-4729-727-A	MAIN BOARD, COMPLETE (RG22:AEP,UK)	
102	A-4729-942-A	MAIN BOARD, COMPLETE (GX30/RG33:MX,AR)	
102	A-4729-966-A	MAIN BOARD, COMPLETE (RG33:AEP,UK)	
102	A-4729-979-A	MAIN BOARD, COMPLETE (RG33:E2,E51)	
102	A-4676-636-A	MAIN BOARD, COMPLETE (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW)	
103	4-988-533-01	HOLDER, PWB	
△ 104	1-690-608-11	CORD, POWER (RG22:AUS)	
△ 104	1-777-071-82	CORD, POWER (RG22:AEP,E51,EA/RG33:AEP,E51)	
△ 104	1-783-528-11	CORD, POWER (TRACKING) (RG22:SP,TH,TW)	
△ 104	1-783-532-11	CORD, POWER (GX30)	
△ 104	1-783-941-22	CORD, POWER (RG22:AR/RG33:AR)	
△ 104	1-790-226-12	CORD, POWER (RG22:UK/RG33:UK)	
△ 104	1-791-901-11	CORD, POWER (RG22:E2,MX/RG33:E2,MX)	
105	1-684-301-21	TRANS BOARD	
* 106	3-703-244-00	BUSHING (2104), CORD	
107	A-4729-719-A	POWER BOARD, COMPLETE (RG22:AEP,UK)	
107	A-4729-939-A	POWER BOARD, COMPLETE (GX30/RG33:MX,AR)	
107	A-4729-962-A	POWER BOARD, COMPLETE (RG33:AEP,UK)	
107	A-4729-982-A	POWER BOARD, COMPLETE (RG33:E2,E51)	

Ref. No.	Part No.	Description	Remarks
107	A-4676-627-A	POWER BOARD, COMPLETE (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW)	
△ F914	1-533-454-11	FUSE, GLASS TUBE (DIA. 5) (GX30)	
△ F914	1-533-473-11	FUSE, GLASS TUBE (DIA. 5) (RG22/RG33)	
△ F919	1-533-453-11	FUSE, GLASS TUBE (DIA. 5) (GX30)	
△ F919	1-533-471-11	FUSE, GLASS TUBE (DIA. 5) (RG22:E2,E51,SP,EA,TW)	
△ F919	1-533-472-11	FUSE, GLASS TUBE (DIA. 5) (RG33:E2,E51)	
△ F920	1-533-454-11	FUSE, GLASS TUBE (DIA. 5) (GX30)	
△ F920	1-533-473-11	FUSE, GLASS TUBE (DIA. 5) (RG22/RG33)	
△ T911	1-437-389-11	TRANSFORMER, POWER (GX30/RG33:MX,AR)	
△ T911	1-437-678-11	TRANSFORMER, POWER (RG22:AUS,MX,AR)	
△ T911	1-437-679-11	TRANSFORMER, POWER (RG22:AEP,UK)	
△ T911	1-437-680-11	TRANSFORMER, POWER (RG22:E2,E51,SP,TH,TW)	
△ T911	1-437-762-11	TRANSFORMER, POWER (RG33:AEP,UK)	
△ T911	1-437-763-11	TRANSFORMER, POWER (RG33:E2,E51)	
△ T911	1-437-830-11	TRANSFORMER, POWER (RG22:EA)	
#2	7-685-871-01	SCREW +BVT 3X6 (S)	
#3	7-685-880-09	SCREW +BVT 4X6 (S)	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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6-4. CD Mechanism Deck Section (CDM58F-K6)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	4-218-254-21	SCREW (M2.6), +PTPWH		170	4-227-045-11	SPRING (INSULATOR), COIL	
152	4-231-187-01	CAM (RELAY)		171	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
153	4-231-177-04	TABLE (NEW)		174	4-231-180-04	CAM (CONTROL)	
154	4-231-181-01	LEVER (CHANGE)		175	4-231-182-01	GEAR (U)	
155	4-231-178-02	TRAY		176	4-231-183-01	PULLEY (S)	
156	4-933-134-51	SCREW (+PTPWH 2.6X8)		179	4-227-899-01	SCREW (DIA.12) FLOATING	
157	1-675-910-14	MOTOR BOARD		182	4-222-097-01	SCREW, STEP	
158	4-218-253-31	SCREW (M2.6), +BTTP		183	4-227-549-11	INSULATOR	
159	1-791-983-12	WIRE (FLAT TYPE) (8 CORE)		184	4-231-151-01	STOPPER (BU)	
160	1-675-911-14	ADDRESS SENSOR BOARD		185	A-4672-826-A	MOTOR ASSY (SLED)	
161	1-675-912-14	DRIVER BOARD		△ 186	8-820-020-02	OPTICAL PICK-UP KSM-213DCP/Z-NP	
162	X-4953-283-2	CAM (U/D) ASSY		187	A-4676-639-A	CD BOARD, COMPLETE	
163	4-231-186-01	LEVER (EX)		188	1-684-307-11	SPDL BOARD	
164	4-231-190-01	LEVER (LIFTER)		189	4-951-620-01	SCREW (2.6X8), +BVTP	
165	4-231-189-01	PULLEY (B), CHUCKING		190	1-823-859-11	WIRE (FLAT TYPE) (16 CORE)	
166	1-471-035-11	MAGNET ASSY		M721	1-763-790-11	MOTOR, DC (TURN)	
167	X-4953-232-1	PULLY (A) ASSY, CHUCKING					
168	X-4953-281-1	HOLDER (BU) ASSY					
169	4-222-095-01	BELT					

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
uF: μ F
- COILS
uH: μ H
- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA..., μ A..., uPA..., μ PA...,
uPB..., μ PB..., uPC..., μ PC...,
uPD..., μ PD...
- Abbreviation
AR : Argentina model
AUS : Australian model
E2 : 120V AC area in E model
E51 : 220V AC area in E model

When indicating parts by reference number, please include the board name.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

EA : Saudi Arabia model
MX : Mexican model
SP : Singapore model
TH : Thai model
TW : Taiwan model

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
	1-675-911-14	ADDRESS SENSOR BOARD *****		C727	1-136-167-00	FILM 0.15uF 5.00%	50V
		< CAPACITOR >		C728	1-127-869-21	CERAMIC 2700PF 10%	50V
C712	1-164-159-11	CERAMIC 0.1uF	50V	C730	1-130-485-00	MYLAR 0.015uF 5%	50V
		< PHOTO INTERRUPTER >		C731	1-130-486-00	MYLAR 0.018uF 10%	50V
IC711	8-749-014-38	PHOTO INTERRUPTER SG-264		C732	1-130-493-00	MYLAR 0.068uF 5%	50V
		< RESISTOR >		C734	1-164-159-21	CERAMIC 0.1uF	50V
R711	1-247-876-11	CARBON 75K 5%	1/4W	C735	1-162-286-21	CERAMIC 220PF 10.00%	50V
R712	1-249-409-11	CARBON 220 5%	1/4W F	C736	1-136-171-00	FILM 0.33uF 5.00%	50V
R713	1-249-429-11	CARBON 10K 5%	1/4W	C737	1-162-306-11	CERAMIC 0.01uF 20.00%	16V
		< SWITCH >		C738	1-162-292-31	CERAMIC 680PF 10%	50V
S711	1-771-821-11	SWITCH, PUSH (1 KEY) (UP/DOWN)		C739	1-162-600-11	CERAMIC 0.0047uF 10.00%	16V
*****				C740	1-162-286-21	CERAMIC 220PF 10.00%	50V
A-4676-639-A	CD BOARD, COMPLETE	*****		C741	1-126-959-11	ELECT 0.47uF 20.00%	50V
		< CAPACITOR >		C742	1-126-947-11	ELECT 47uF 20.00%	10V
C704	1-164-159-21	CERAMIC 0.1uF	50V	C743	1-126-960-11	ELECT 1uF 20.00%	50V
C705	1-126-947-11	ELECT 47uF	20.00% 10V	C744	1-127-870-21	CERAMIC 3300PF 10%	50V
C706	1-164-159-21	CERAMIC 0.1uF	50V	C745	1-162-194-31	CERAMIC 3.9PF 10.00%	50V
C707	1-126-964-11	ELECT 10uF	20.00% 50V	C746	1-162-306-11	CERAMIC 0.01uF 20.00%	16V
C708	1-161-494-00	CERAMIC 0.022uF	25V	C747	1-164-159-21	CERAMIC 0.1uF	50V
C709	1-104-665-11	ELECT 100uF	20.00% 10V	C748	1-162-294-31	CERAMIC 0.001uF 10%	50V
C710	1-104-665-11	ELECT 100uF	20.00% 10V	C749	1-162-205-31	CERAMIC 18PF 5%	50V
C711	1-162-306-11	CERAMIC 0.01uF	20.00% 16V	C750	1-126-963-11	ELECT 4.7uF 20.00%	50V
C712	1-136-169-00	FILM 0.22uF	5.00% 50V	C751	1-164-159-21	CERAMIC 0.1uF	50V
C713	1-164-159-21	CERAMIC 0.1uF	50V	C752	1-164-159-21	CERAMIC 0.1uF	50V
C714	1-126-947-11	ELECT 47uF	20.00% 10V	C753	1-164-159-21	CERAMIC 0.1uF	50V
C715	1-162-294-31	CERAMIC 0.001uF	10% 50V	C754	1-162-286-21	CERAMIC 220PF 10.00%	50V
C717	1-126-964-11	ELECT 10uF	20.00% 50V	C755	1-161-494-00	CERAMIC 0.022uF	25V
C719	1-161-494-00	CERAMIC 0.022uF	25V	C756	1-126-947-11	ELECT 47uF	20.00% 10V
C720	1-162-282-31	CERAMIC 100PF	10% 50V	C757	1-161-494-00	CERAMIC 0.022uF	25V
C721	1-162-282-31	CERAMIC 100PF	10% 50V	C758	1-126-947-11	ELECT 47uF	20.00% 10V
C722	1-162-282-31	CERAMIC 100PF	10% 50V	C759	1-164-159-21	CERAMIC 0.1uF	50V
C723	1-136-169-00	FILM 0.22uF	5.00% 50V	C760	1-162-284-31	CERAMIC 150PF 10.00%	50V
C724	1-130-489-00	MYLAR 0.033uF	5% 50V	C761	1-162-206-31	CERAMIC 20PF 5%	50V
C725	1-162-288-31	CERAMIC 330PF	10% 50V	C762	1-162-206-31	CERAMIC 20PF 5%	50V
C726	1-136-171-00	FILM 0.33uF	5.00% 50V	C763	1-126-947-11	ELECT 47uF	20.00% 10V
				C764	1-161-494-00	CERAMIC 0.022uF	25V
				C765	1-162-280-31	CERAMIC 82PF 10%	50V
				C767	1-162-282-31	CERAMIC 100PF 10%	50V
				C768	1-162-282-31	CERAMIC 100PF 10%	50V
				C769	1-162-282-31	CERAMIC 100PF	10% 50V
				C770	1-162-282-31	CERAMIC 100PF	10% 50V
				C771	1-126-961-11	ELECT 2.2uF	20.00% 50V
				C772	1-126-961-11	ELECT 2.2uF	20.00% 50V
				C773	1-162-300-11	CERAMIC 0.01uF	30% 16V

Ref. No.	Part No.	Description				Remarks	Ref. No.	Part No.	Description				Remarks
C774	1-126-300-11	CERAMIC	0.01uF	30%	16V		R717	1-249-439-11	CARBON	68K	5%	1/4W	
C775	1-162-282-31	CERAMIC	100PF	10%	50V		R718	1-249-436-11	CARBON	39K	5%	1/4W	
C776	1-162-282-31	CERAMIC	100PF	10%	50V		R719	1-247-843-11	CARBON	3.3K	5%	1/4W	
C777	1-126-947-11	ELECT	47uF	20.00%	10V		R720	1-249-434-11	CARBON	27K	5%	1/4W	
C781	1-126-926-11	ELECT	1000uF	20.00%	10V		R721	1-249-414-11	CARBON	560	5%	1/4W	F
C782	1-164-159-21	CERAMIC	0.1uF		50V		R722	1-249-431-11	CARBON	15K	5%	1/4W	
C783	1-126-961-11	ELECT	2.2uF	20.00%	50V		R724	1-249-433-11	CARBON	22K	5%	1/4W	
C786	1-161-494-00	CERAMIC	0.022uF		25V		R725	1-249-430-11	CARBON	12K	5%	1/4W	
C787	1-104-665-11	ELECT	100uF	20.00%	10V		R727	1-249-427-11	CARBON	6.8K	5%	1/4W	F
C788	1-162-290-31	CERAMIC	470PF	10%	50V		R728	1-249-435-11	CARBON	33K	5%	1/4W	
C789	1-164-159-21	CERAMIC	0.1uF		50V		R729	1-249-419-11	CARBON	1.5K	5%	1/4W	F
C790	1-164-159-21	CERAMIC	0.1uF		50V		R731	1-249-432-11	CARBON	18K	5%	1/4W	
C791	1-164-159-21	CERAMIC	0.1uF		50V		R732	1-247-885-00	CARBON	180K	5%	1/4W	
C792	1-164-159-21	CERAMIC	0.1uF		50V		R733	1-249-438-11	CARBON	56K	5%	1/4W	
		< CONNECTOR >					R734	1-249-434-11	CARBON	27K	5%	1/4W	
CN731	1-779-553-11	CONNECTOR,FFC(LIF(NON-ZIF))16P					R735	1-249-435-11	CARBON	33K	5%	1/4W	
* CN732	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P					R736	1-249-419-11	CARBON	1.5K	5%	1/4W	F
CN733	1-784-780-11	CONNECTOR, FFC 19P					R737	1-247-843-11	CARBON	3.3K	5%	1/4W	
* CN734	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P					R738	1-247-807-31	CARBON	100	5%	1/4W	
* CN735	1-564-712-11	PIN, CONNECTOR (SMALL TYPE)10P					R739	1-249-419-11	CARBON	1.5K	5%	1/4W	F
		< DIODE >					R740	1-249-427-11	CARBON	6.8K	5%	1/4W	F
							R741	1-249-424-11	CARBON	3.9K	5%	1/4W	F
D731	8-719-991-33	DIODE 1SS133T-77					R742	1-247-897-11	CARBON	560K	5%	1/4W	
D732	8-719-991-33	DIODE 1SS133T-77					R743	1-247-897-11	CARBON	560K	5%	1/4W	
		< FERRITE BEAD >					R744	1-249-428-11	CARBON	8.2K	5%	1/4W	F
							R745	1-249-431-11	CARBON	15K	5%	1/4W	
FB751	1-410-397-21	FERRITE BEAD INDUCTOR					R746	1-249-411-11	CARBON	330	5%	1/4W	
		< IC >					R747	1-249-433-11	CARBON	22K	5%	1/4W	
							R748	1-249-437-11	CARBON	47K	5%	1/4W	
IC731	6-702-016-01	IC LA9242M					R749	1-249-415-11	CARBON	680	5%	1/4W	F
IC751	6-700-355-01	IC LC78622NE					R750	1-249-425-11	CARBON	4.7K	5%	1/4W	F
IC781	6-700-304-01	IC MM1469XH					R751	1-249-415-11	CARBON	680	5%	1/4W	F
		< COIL >					R752	1-249-434-11	CARBON	27K	5%	1/4W	
							R753	1-249-418-11	CARBON	1.2K	5%	1/4W	F
							R754	1-249-435-11	CARBON	33K	5%	1/4W	
L701	1-410-509-11	INDUCTOR 10uH					R755	1-249-442-11	CARBON	510	5%	1/4W	
L702	1-410-509-11	INDUCTOR 10uH					R756	1-247-903-00	CARBON	1M	5%	1/4W	
L703	1-410-521-11	INDUCTOR 100uH					R757	1-249-437-11	CARBON	47K	5%	1/4W	
L704	1-410-509-11	INDUCTOR 10uH					R758	1-249-417-11	CARBON	1K	5%	1/4W	F
L705	1-410-521-11	INDUCTOR 100uH					R759	1-249-417-11	CARBON	1K	5%	1/4W	F
		< TRANSISTOR >					R760	1-247-807-31	CARBON	100	5%	1/4W	
Q731	8-729-116-57	TRANSISTOR 2SB1068TP-K					R761	1-249-417-11	CARBON	1K	5%	1/4W	F
Q771	8-729-119-78	TRANSISTOR 2SC2785TP-HFE					R762	1-249-417-11	CARBON	1K	5%	1/4W	F
Q772	8-729-119-78	TRANSISTOR 2SC2785TP-HFE					R763	1-249-417-11	CARBON	1K	5%	1/4W	F
Q774	8-729-119-76	TRANSISTOR 2SA1175TP-HFE					R764	1-249-417-11	CARBON	1K	5%	1/4W	F
Q775	8-729-119-78	TRANSISTOR 2SC2785TP-HFE					R765	1-249-417-11	CARBON	1K	5%	1/4W	F
		< RESISTOR >					R766	1-247-807-31	CARBON	100	5%	1/4W	
							R767	1-247-855-11	CARBON	10K	5%	1/4W	
R703	1-247-807-31	CARBON 100 5% 1/4W					R768	1-247-855-11	CARBON	10K	5%	1/4W	
R704	1-249-393-11	CARBON 10 5% 1/4W				F	R771	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-247-807-31	CARBON 100 5% 1/4W					R772	1-249-429-11	CARBON	10K	5%	1/4W	
R706	1-247-807-31	CARBON 100 5% 1/4W					R773	1-249-429-11	CARBON	10K	5%	1/4W	
R707	1-247-807-31	CARBON 100 5% 1/4W					R774	1-249-429-11	CARBON	10K	5%	1/4W	
							R775	1-249-429-11	CARBON	10K	5%	1/4W	
R708	1-249-441-11	CARBON 100K 5% 1/4W					R776	1-249-429-11	CARBON	10K	5%	1/4W	
R709	1-249-427-11	CARBON 6.8K 5% 1/4W				F							
R710	1-249-421-11	CARBON 2.2K 5% 1/4W				F	R777	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R715	1-249-430-11	CARBON 12K 5% 1/4W					R778	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R716	1-249-439-11	CARBON 68K 5% 1/4W					R780	1-249-425-11	CARBON	4.7K	5%	1/4W	F

HCD-GX30/RG22/RG33

CD	DRIVER	KEYBOARD	MAIN
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Ref. No.	Part No.	Description			Remarks
R781	1-249-434-11	CARBON	27K	5%	1/4W
R782	1-249-429-11	CARBON	10K	5%	1/4W
R783	1-249-421-11	CARBON	2.2K	5%	1/4W F
R784	1-247-807-31	CARBON	100	5%	1/4W
R785	1-247-889-00	CARBON	270K	5%	1/4W
R786	1-249-429-11	CARBON	10K	5%	1/4W
R787	1-249-429-11	CARBON	10K	5%	1/4W
R788	1-249-417-11	CARBON	1K	5%	1/4W F
R789	1-247-889-00	CARBON	270K	5%	1/4W
R792	1-249-421-11	CARBON	2.2K	5%	1/4W F
R793	1-247-807-31	CARBON	100	5%	1/4W
R794	1-249-437-11	CARBON	47K	5%	1/4W
R795	1-249-437-11	CARBON	47K	5%	1/4W
R796	1-249-437-11	CARBON	47K	5%	1/4W
R797	1-249-437-11	CARBON	47K	5%	1/4W
R798	1-249-441-11	CARBON	100K	5%	1/4W
R799	1-249-441-11	CARBON	100K	5%	1/4W
< TEST PIN >					
* TP731	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
< VIBRATOR >					
X701	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			

	1-675-912-14	DRIVER BOARD			

< CAPACITOR >					
C702	1-126-964-51	ELEC	10uF	20.00%	50V
< CONNECTOR >					
CN702	1-785-550-11	CONNECTOR, FFC/FPC 8P			
< DIODE >					
D701	8-719-983-15	DIODE MTZJ-T-77-3.9A			
< IC >					
IC701	8-759-598-69	IC BA6956AN			
< RESISTOR >					
R701	1-249-411-11	CARBON	330	5%	1/4W
R702	1-249-401-11	CARBON	47	5%	1/4W F

	1-684-305-21	KEYBOARD BOARD			

< DIODE >					
LED615	8-719-304-83	DIODE SEL2410G (GAME MIXING)			
< RESISTOR >					
R654	1-249-415-11	CARBON	680	5%	1/4W F
R656	1-249-421-11	CARBON	2.2K	5%	1/4W F
R657	1-247-843-11	CARBON	3.3K	5%	1/4W
R658	1-249-425-11	CARBON	4.7K	5%	1/4W F
R659	1-249-427-11	CARBON	6.8K	5%	1/4W F

Ref. No.	Part No.	Description	Remarks		
R660	1-249-429-11	CARBON	10K	5%	1/4W
R661	1-249-419-11	CARBON	1.5K	5%	1/4W F
R662	1-249-421-11	CARBON	2.2K	5%	1/4W F
R663	1-249-413-11	CARBON	470	5%	1/4W F
R664	1-249-415-11	CARBON	680	5%	1/4W F
R665	1-249-417-11	CARBON	1K	5%	1/4W F
R666	1-249-419-11	CARBON	1.5K	5%	1/4W F
R667	1-249-419-11	CARBON	1.5K	5%	1/4W F
R668	1-249-421-11	CARBON	2.2K	5%	1/4W F
R669	1-247-843-11	CARBON	3.3K	5%	1/4W
R670	1-249-425-11	CARBON	4.7K	5%	1/4W F
< SWITCH >					
S602	1-762-196-21	SWITCH, TACT (DISPLAY)			
S616	1-762-196-21	SWITCH, TACT (CD SYNC)			
S617	1-762-196-21	SWITCH, TACT (REC PAUSE/START)			
S618	1-762-196-21	SWITCH, TACT (EFFECT ON/OFF)			
S619	1-762-196-21	SWITCH, TACT (GROOVE)			
S620	1-762-196-21	SWITCH, TACT (MOVIE EQ)			
S625	1-762-196-21	SWITCH, TACT (GAME EQ)			
S626	1-762-196-21	SWITCH, TACT (MUSIC EQ)			
S631	1-762-196-21	SWITCH, TACT (pause)			
S632	1-762-196-21	SWITCH, TACT (stop)			
S633	1-762-196-21	SWITCH, TACT (fff)			
S634	1-762-196-21	SWITCH, TACT (ff+)			
S635	1-762-196-21	SWITCH, TACT (play)			
S636	1-762-196-21	SWITCH, TACT (-fr)			
S637	1-762-196-21	SWITCH, TACT (ffr)			
S638	1-762-196-21	SWITCH, TACT (GAME MIXING)			

A-4676-636-A		MAIN BOARD, COMPLETE (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW)			
A-4729-727-A		MAIN BOARD, COMPLETE (RG22:AEP,UK)			
A-4729-979-A		MAIN BOARD, COMPLETE (RG33:E2,E51)			
A-4729-966-A		MAIN BOARD, COMPLETE (RG33:AEP,UK)			
A-4729-942-A		MAIN BOARD, COMPLETE (GX30/RG33:MX,AR)			

< CAPACITOR >					
C101	1-162-306-11	CERAMIC	0.01uF	30.00%	16V (EXCEPT RG22:AEP,UK/RG33:AEP,UK)
C102	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C103	1-126-947-11	ELECT	47uF	20.00%	16V
C104	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C105	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C106	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C107	1-126-962-11	ELECT	3.3uF	20.00%	50V
C108	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C109	1-126-964-11	ELECT	10uF	20.00%	50V
C110	1-161-494-00	CERAMIC	0.022uF		25V
C111	1-162-292-31	CERAMIC	680PF	10%	50V
C112	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C113	1-126-964-11	ELECT	10uF	20.00%	50V
C114	1-162-600-11	CERAMIC	0.0047uF	30.00%	16V
C115	1-130-487-00	MYLAR	0.022uF	5%	50V
C116	1-130-487-00	MYLAR	0.022uF	5%	50V
C117	1-164-159-11	CERAMIC	0.1uF		50V
C118	1-126-963-11	ELECT	4.7uF	20.00%	50V

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
C119	1-126-960-11	ELECT	1uF	20.00%	50V	C201	1-162-293-31	CERAMIC	820PF	10.00%	50V
C120	1-126-959-11	ELECT	0.47uF	20.00%	50V	C202	1-162-293-31	CERAMIC	820PF	10.00%	50V
C121	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C203	1-162-293-31	CERAMIC	820PF	10.00%	50V
C122	1-126-960-11	ELECT	1uF	20.00%	50V	C204	1-162-293-31	CERAMIC	820PF	10.00%	50V
C123	1-126-947-11	ELECT	47uF	20.00%	16V	C205	1-130-483-00	MYLAR	0.01uF	5%	50V
C124	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C206	1-130-483-00	MYLAR	0.01uF	5%	50V
C125	1-126-947-11	ELECT	47uF	20.00%	16V	C209	1-126-960-11	ELECT	1uF	20.00%	50V
C126	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C210	1-126-960-11	ELECT	1uF	20.00%	50V
C127	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C211	1-126-961-11	ELECT	2.2uF	20.00%	50V
C128	1-126-963-11	ELECT	4.7uF	20.00%	50V	C212	1-126-961-11	ELECT	2.2uF	20.00%	50V
C129	1-126-963-11	ELECT	4.7uF	20.00%	50V	C213	1-126-960-11	ELECT	1uF	20.00%	50V
C130	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C214	1-126-960-11	ELECT	1uF	20.00%	50V
C131	1-162-198-31	CERAMIC	8.2PF	10.00%	50V	C215	1-126-961-11	ELECT	2.2uF	20.00%	50V
C132	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C216	1-126-961-11	ELECT	2.2uF	20.00%	50V
C133	1-162-211-31	CERAMIC	33PF	5%	50V	C217	1-127-866-21	CERAMIC	1500PF	10%	50V
C134	1-126-959-11	ELECT	(RG22:AEP,UK/RG33:AEP,UK)	20.00%	50V	C218	1-126-961-11	ELECT	2.2uF	20.00%	50V
C135	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C219	1-126-961-11	ELECT	2.2uF	20.00%	50V
C136	1-126-947-11	ELECT	47uF	20.00%	16V	C220	1-127-866-21	CERAMIC	1500PF	10%	50V
C137	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C221	1-136-967-11	MYLAR	0.012uF	5.00%	50V
C138	1-126-961-11	ELECT	2.2uF	20.00%	50V	C222	1-136-967-11	MYLAR	0.012uF	5.00%	50V
C139	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C223	1-162-290-31	CERAMIC	470PF	10%	50V
C140	1-126-947-11	ELECT	47uF	20.00%	16V	C224	1-126-964-11	ELECT	10uF	20.00%	50V
C141	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C225	1-126-933-11	ELECT	100uF	20.00%	16V
C142	1-128-802-21	CERAMIC	27PF	5%	50V	C226	1-126-963-11	ELECT	4.7uF	20.00%	50V
C143	1-128-802-21	CERAMIC	27PF	5%	50V	C227	1-128-551-11	ELECT	22uF	20.00%	25V
C144	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C228	1-126-963-11	ELECT	4.7uF	20.00%	50V
C148	1-162-211-31	CERAMIC	33PF	5%	50V	C230	1-126-963-11	ELECT	4.7uF	20.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C231	1-126-960-11	ELECT	1uF	20.00%	50V
C149	1-162-294-31	CERAMIC	0.001uF	10%	50V	C232	1-126-947-11	ELECT	47uF	20.00%	25V
C150	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C233	1-126-947-11	ELECT	47uF	20.00%	16V
C151	1-126-963-11	ELECT	4.7uF	20.00%	50V	C233	1-126-964-11	ELECT	10uF	20.00%	50V
C152	1-164-159-11	CERAMIC	0.1uF		50V	C234	1-126-963-11	ELECT	4.7uF	20.00%	50V
C171	1-126-947-11	ELECT	47uF	20.00%	16V	C235	1-162-290-31	CERAMIC	470PF	10%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C236	1-130-485-00	MYLAR	0.015uF	5%	50V
C172	1-164-159-11	CERAMIC	0.1uF		50V	C237	1-130-485-00	MYLAR	0.015uF	5%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C238	1-130-485-00	MYLAR	0.015uF	5%	50V
C173	1-162-291-31	CERAMIC	560PF	10.00%	50V	C239	1-130-479-00	MYLAR	0.0047uF	5%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C240	1-162-290-31	CERAMIC	470PF	10%	50V
C175	1-162-288-31	CERAMIC	330PF	10%	50V	C241	1-162-290-31	CERAMIC	470PF	10%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C244	1-126-947-11	ELECT	47uF	20.00%	25V
C176	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C245	1-126-933-11	ELECT	100uF	20.00%	16V
			(RG22:AEP,UK/RG33:AEP,UK)			C246	1-162-215-31	CERAMIC	47PF	5%	50V
C179	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C247	1-126-960-11	ELECT	1uF	20.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C248	1-162-215-31	CERAMIC	47PF	5%	50V
C180	1-162-306-11	CERAMIC	0.01uF	30.00%	16V	C249	1-126-956-91	ELECT	0.1uF	20.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C250	1-126-960-11	ELECT	1uF	20.00%	50V
C181	1-126-961-11	ELECT	2.2uF	20.00%	50V	C251	1-162-215-31	CERAMIC	47PF	5%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C252	1-161-494-00	CERAMIC	0.022uF		25V
C182	1-128-806-21	CERAMIC	56PF	5%	50V	C253	1-126-961-11	ELECT	2.2uF	20.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C260	1-161-494-00	CERAMIC	0.022uF		25V
C183	1-128-806-21	CERAMIC	56PF	5%	50V	C261	1-162-286-21	CERAMIC	220PF	10.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C262	1-162-292-31	CERAMIC	680PF	10%	50V
C184	1-126-961-11	ELECT	2.2uF	20.00%	50V	C263	1-162-286-21	CERAMIC	220PF	10.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C264	1-164-159-11	CERAMIC	0.1uF		50V
C185	1-162-291-31	CERAMIC	560PF	10.00%	50V	C265	1-164-159-11	CERAMIC	0.1uF		50V
			(RG22:AEP,UK/RG33:AEP,UK)			C301	1-126-959-11	ELECT	0.47uF	20.00%	50V
C186	1-126-964-11	ELECT	10uF	20.00%	50V	C302	1-126-959-11	ELECT	0.47uF	20.00%	50V
			(RG22:AEP,UK/RG33:AEP,UK)			C303	1-126-961-11	ELECT	2.2uF	20.00%	50V
C187	1-162-306-11	CERAMIC	0.01uF	30.00%	16V						
			(RG22:AEP,UK/RG33:AEP,UK)								

HCD-GX30/RG22/RG33

MAIN

Ref. No.	Part No.	Description	Remarks
C304	1-126-961-11	ELECT	2.2uF 20.00% 50V
C305	1-126-961-11	ELECT	2.2uF 20.00% 50V
C334	1-126-961-11	ELECT	2.2uF 20.00% 50V
C335	1-126-961-11	ELECT	2.2uF 20.00% 50V
C337	1-126-933-11	ELECT	100uF 20.00% 16V
C339	1-126-961-11	ELECT	2.2uF 20.00% 50V
C340	1-126-961-11	ELECT	2.2uF 20.00% 50V
C341	1-126-947-11	ELECT	47uF 20.00% 16V
C342	1-126-961-11	ELECT	2.2uF 20.00% 50V
C343	1-126-961-11	ELECT	2.2uF 20.00% 50V
C344	1-126-947-11	ELECT	47uF 20.00% 16V
C345	1-126-957-11	ELECT	0.22uF 20.00% 50V
C346	1-126-947-11	ELECT	47uF 20.00% 16V
C347	1-162-199-31	CERAMIC	10PF 5% 50V
C348	1-162-199-31	CERAMIC	10PF 5% 50V
C349	1-109-953-11	ELECT	2.2uF 20.00% 50V
C350	1-109-953-11	ELECT	2.2uF 20.00% 50V
C356	1-162-199-31	CERAMIC	10PF 5% 50V
C361	1-126-961-11	ELECT	2.2uF 20.00% 50V
C362	1-126-961-11	ELECT	2.2uF 20.00% 50V
C363	1-126-961-11	ELECT	2.2uF 20.00% 50V
C364	1-126-961-11	ELECT	2.2uF 20.00% 50V
C365	1-126-960-11	ELECT	1uF 20.00% 50V
C366	1-126-960-11	ELECT	1uF 20.00% 50V
C368	1-126-947-11	ELECT	47uF 20.00% 16V
C369	1-127-868-21	CERAMIC	2200PF 10% 50V
C370	1-127-868-21	CERAMIC	2200PF 10% 50V
C371	1-127-868-21	CERAMIC	2200PF 10% 50V
C372	1-136-169-00	FILM	0.22uF 5.00% 50V
C373	1-136-169-00	FILM	0.22uF 5.00% 50V
C374	1-136-169-00	FILM	0.22uF 5.00% 50V
C375	1-136-169-00	FILM	0.22uF 5.00% 50V
C376	1-126-964-11	ELECT	10uF 20.00% 50V
C377	1-126-964-11	ELECT	10uF 20.00% 50V
C378	1-126-934-11	ELECT	220uF 20.00% 16V
C379	1-162-286-21	CERAMIC	220PF 10.00% 50V
C380	1-162-286-21	CERAMIC	220PF 10.00% 50V
C381	1-164-159-11	CERAMIC	0.1uF 50V
C382	1-107-714-11	ELECT	10uF 20.00% 16V
C383	1-126-933-11	ELECT	100uF 20.00% 16V
C384	1-126-961-11	ELECT	2.2uF 20.00% 50V
C385	1-126-961-11	ELECT	2.2uF 20.00% 50V
C386	1-162-199-31	CERAMIC	10PF 5% 50V
C387	1-162-199-31	CERAMIC	10PF 5% 50V
C388	1-126-961-11	ELECT	2.2uF 20.00% 50V
C389	1-126-961-11	ELECT	2.2uF 20.00% 50V
C391	1-126-933-11	ELECT	100uF 20.00% 16V
C392	1-107-714-11	ELECT	10uF 20.00% 16V
C393	1-107-717-11	ELECT	47uF 20.00% 50V
C395	1-162-199-31	CERAMIC	10PF 5% 50V
C397	1-164-159-11	CERAMIC	0.1uF 50V
C398	1-136-165-00	FILM	0.1uF 5.00% 50V (RG22:AEP,UK/RG33:AEP,UK)
C399	1-136-165-00	FILM	0.1uF 5.00% 50V (RG22:AEP,UK/RG33:AEP,UK)
C801	1-136-165-00	FILM	0.1uF 5.00% 50V
C802	1-136-165-00	FILM	0.1uF 5.00% 50V
C803	1-130-483-00	MYLAR	0.01uF 5% 50V
C804	1-130-483-00	MYLAR	0.01uF 5% 50V

Ref. No.	Part No.	Description	Remarks
C805	1-126-768-11	ELECT	2200uF 20.00% 16V
C806	1-126-944-11	ELECT	3300uF 20.00% 25V
C807	1-126-964-11	ELECT	10uF 20.00% 50V
C808	1-126-767-11	ELECT	1000uF 20.00% 16V
C809	1-126-964-11	ELECT	10uF 20.00% 50V
C810	1-126-933-11	ELECT	100uF 20.00% 16V
C811	1-126-964-11	ELECT	10uF 20.00% 50V
C812	1-126-933-11	ELECT	100uF 20.00% 16V
C813	1-126-964-11	ELECT	10uF 20.00% 50V
C814	1-126-916-11	ELECT	1000uF 20.00% 6.3V
C815	1-126-935-11	ELECT	470uF 20.00% 16V
C816	1-126-963-11	ELECT	4.7uF 20.00% 50V (GX30/RG33)
C817	1-136-165-00	FILM	0.1uF 5.00% 50V (GX30/RG33)
C818	1-126-961-11	ELECT	2.2uF 20.00% 50V
C819	1-126-963-11	ELECT	4.7uF 20.00% 50V
C820	1-104-665-11	ELECT	100uF 20.00% 25V
< FILTER >			
CF101	1-760-023-11	FILTER, CERAMIC (GX30/RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51,MX,AR)	
CF101	1-795-426-11	FILTER, CERAMIC (RG22:AEP,UK/RG33:AEP,UK)	
CF102	1-760-023-11	FILTER, CERAMIC (GX30/RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51,MX,AR)	
CF102	1-795-426-11	FILTER, CERAMIC (RG22:AEP,UK/RG33:AEP,UK)	
< CONNECTOR >			
* CN201	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CN202	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P	
CN207	1-784-774-11	CONNECTOR, FFC 13P	
CN301	1-564-506-11	PLUG, CONNECTOR 3P (GX30/RG33)	
* CN303	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
CN402	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P	
CN403	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P	
CN603	1-793-766-11	CONNECTOR, BOARD TO BOARD 30P	
< VIBRATOR >			
CX101	1-760-549-31	VIBRATOR, CRYSTAL (4.5MHZ)	
< DIODE >			
D105	8-719-991-33	DIODE 1SS133T-77	
D107	8-719-991-33	DIODE 1SS133T-77 (RG22:AEP,UK/RG33:AEP,UK)	
D111	8-719-991-33	DIODE 1SS133T-77	
D112	8-719-991-33	DIODE 1SS133T-77	
D201	8-719-991-33	DIODE 1SS133T-77	
D250	8-719-991-33	DIODE 1SS133T-77	
D251	8-719-991-33	DIODE 1SS133T-77	
D252	8-719-991-33	DIODE 1SS133T-77	
D253	8-719-991-33	DIODE 1SS133T-77	
D254	8-719-991-33	DIODE 1SS133T-77	
D255	8-719-991-33	DIODE 1SS133T-77	
D256	8-719-991-33	DIODE 1SS133T-77	
D257	8-719-991-33	DIODE 1SS133T-77	
D304	8-719-929-15	DIODE MTZJ-T-77-9.1B	
D309	8-719-991-33	DIODE 1SS133T-77	
D310	8-719-991-33	DIODE 1SS133T-77	
D312	8-719-991-33	DIODE 1SS133T-77	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D313	8-719-991-33	DIODE 1SS133T-77		Q106	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D315	8-719-991-33	DIODE 1SS133T-77		Q107	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	(RG22:AEP,UK/RG33:AEP,UK)
D801	8-719-200-82	DIODE 11ES2-NTA1B					
D802	8-719-200-82	DIODE 11ES2-NTA1B		Q201	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D803	8-719-200-82	DIODE 11ES2-NTA1B		Q202	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D804	8-719-200-82	DIODE 11ES2-NTA1B		Q203	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D805	8-719-200-82	DIODE 11ES2-NTA1B		Q204	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D806	8-719-200-82	DIODE 11ES2-NTA1B		Q205	8-729-119-76	TRANSISTOR 2SA1175TP-HFE	
D807	8-719-200-82	DIODE 11ES2-NTA1B		Q206	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D808	8-719-200-82	DIODE 11ES2-NTA1B		Q207	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
D809	8-719-200-82	DIODE 11ES2-NTA1B		Q208	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D810	8-719-200-82	DIODE 11ES2-NTA1B		Q209	8-729-142-46	TRANSISTOR 2SC2001TP-LK	
D811	8-719-991-33	DIODE 1SS133T-77		Q220	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D814	8-719-991-33	DIODE 1SS133T-77 (GX30/RG33)		Q221	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
D815	8-719-991-33	DIODE 1SS133T-77 (GX30/RG33)		Q222	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
D816	8-719-991-33	DIODE 1SS133T-77		Q223	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
		< FRONT END >		Q224	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
				Q225	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
FE101	1-693-478-11	FRONT END (3 GANG)		Q226	8-729-140-04	TRANSISTOR 2SB1116-TP-LK	
		(GX30/RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW/RG33:E2,E51,MX,AR)		Q227	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
FE103	1-693-496-11	FRONT END (4 GANG)		Q228	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
		(RG22:AEP,UK/RG33:AEP,UK)		Q229	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
		< TERMINAL >		Q305	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
* GND1	1-537-738-21	TERMINAL, EARTH		Q306	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
		< IC >		Q307	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
				Q308	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
IC101	8-759-828-33	IC LA1845		Q311	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
IC102	8-759-590-13	IC LC72131D		Q312	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
IC103	8-759-541-48	IC BU1924 (RG22:AEP,UK/RG33:AEP,UK)					
IC201	6-702-130-01	IC HA12237F		Q313	8-729-900-63	TRANSISTOR BN1F4M-TP	
IC202	8-759-828-32	IC PT8300		Q314	8-729-116-02	TRANSISTOR BA1A4M-TP	
				Q315	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
IC301	6-701-758-01	IC BD3873FS		Q316	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
IC303	8-759-167-88	IC NJM4565D		Q317	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
IC801	8-759-701-59	IC M5F7809L					
IC802	8-759-088-08	IC μ PC7812AHF		Q318	8-729-029-68	TRANSISTOR BA1A4Z-TP	
IC803	8-759-039-69	IC μ PC7805AHF		Q319	8-729-029-68	TRANSISTOR BA1A4Z-TP	
IC804	8-759-039-69	IC μ PC7805AHF		Q320	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
		< IFT >		Q321	8-729-029-68	TRANSISTOR BA1A4Z-TP	
IFT101	1-435-848-12	TRANSFORMER,IF(CERAMIC FILTER)		Q322	8-729-029-68	TRANSISTOR BA1A4Z-TP	
		< TERMINAL >					
JK101	1-694-555-12	TERMINAL BOARD (4P) (ANTENNA)		Q328	8-729-900-63	TRANSISTOR BN1F4M-TP	
JK303	1-694-635-12	TERMINAL BOARD (4P) (SPEAKER)		Q329	8-729-900-63	TRANSISTOR BN1F4M-TP	
		< COIL >		Q330	8-729-900-63	TRANSISTOR BN1F4M-TP	
L101	1-414-186-31	INDUCTOR 33 μ H (RG22:AEP,UK/RG33:AEP,UK)		Q331	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
L109	1-414-189-31	INDUCTOR 100 μ H (RG22:AEP,UK/RG33:AEP,UK)		Q332	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
L201	1-424-849-11	COIL, OSCILLATION (BIAS)					
L351	1-422-009-13	COIL, AIR-CORE (RG22:AEP,UK/RG33:AEP,UK)		Q333	8-729-900-63	TRANSISTOR BN1F4M-TP	
L352	1-422-009-13	COIL, AIR-CORE (RG22:AEP,UK/RG33:AEP,UK)		Q801	8-729-116-02	TRANSISTOR BA1A4M-TP	
		< TRANSISTOR >		Q802	8-729-049-79	TRANSISTOR RT1P137S-TP	
Q101	8-729-015-41	TRANSISTOR 2SC1675-T1		Q803	8-729-142-46	TRANSISTOR 2SC2001TP-LK (GX30/RG33)	
Q102	8-729-422-57	TRANSISTOR BN1A4M-TP		Q805	8-729-119-76	TRANSISTOR 2SA1175TP-HFE	
Q105	8-729-119-78	TRANSISTOR 2SC2785TP-HFE					
				Q806	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
				Q807	8-729-142-46	TRANSISTOR 2SC2001TP-LK	
				Q808	8-729-142-46	TRANSISTOR 2SC2001TP-LK	
				Q809	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
				Q810	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
				Q813	8-729-119-78	TRANSISTOR 2SC2785TP-HFE	
						< RESISTOR >	
				R101	1-249-407-11	CARBON 150 5% 1/4W F	

HCD-GX30/RG22/RG33

MAIN

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R102	1-249-415-11	CARBON	680	5%	1/4W F	R205	1-249-428-11	CARBON	8.2K	5%	1/4W F
R103	1-249-415-11	CARBON	680	5%	1/4W F	R206	1-249-428-11	CARBON	8.2K	5%	1/4W F
R104	1-249-411-11	CARBON	330	5%	1/4W						
R105	1-249-417-11	CARBON	1K	5%	1/4W F	R207	1-249-429-11	CARBON	10K	5%	1/4W
						R208	1-249-421-11	CARBON	2.2K	5%	1/4W F
R106	1-249-401-11	CARBON	47	5%	1/4W F	R209	1-249-421-11	CARBON	2.2K	5%	1/4W F
R107	1-249-401-11	CARBON	47	5%	1/4W F	R210	1-249-429-11	CARBON	10K	5%	1/4W
R108	1-247-843-11	CARBON	3.3K	5%	1/4W	R211	1-249-429-11	CARBON	10K	5%	1/4W
R109	1-249-429-11	CARBON	10K	5%	1/4W						
R110	1-249-425-11	CARBON	4.7K	5%	1/4W F	R212	1-249-429-11	CARBON	10K	5%	1/4W
						R213	1-249-429-11	CARBON	10K	5%	1/4W
R111	1-249-436-11	CARBON	39K	5%	1/4W	R214	1-249-422-11	CARBON	2.7K	5%	1/4W F
R112	1-249-434-11	CARBON	27K	5%	1/4W	R215	1-249-422-11	CARBON	2.7K	5%	1/4W F
R113	1-247-843-11	CARBON	3.3K	5%	1/4W	R218	1-249-421-11	CARBON	2.2K	5%	1/4W F
R114	1-249-410-11	CARBON	270	5%	1/4W F						
R115	1-247-843-11	CARBON	3.3K	5%	1/4W	R219	1-249-417-11	CARBON	1K	5%	1/4W F
						R220	1-247-843-11	CARBON	3.3K	5%	1/4W
R116	1-249-431-11	CARBON	15K	5%	1/4W	R221	1-247-843-11	CARBON	3.3K	5%	1/4W
R117	1-249-431-11	CARBON	15K	5%	1/4W	R222	1-249-433-11	CARBON	22K	5%	1/4W
R118	1-249-425-11	CARBON	4.7K	5%	1/4W F	R223	1-249-433-11	CARBON	22K	5%	1/4W
R119	1-249-425-11	CARBON	4.7K	5%	1/4W F						
R120	1-249-431-11	CARBON	15K	5%	1/4W	R224	1-249-433-11	CARBON	22K	5%	1/4W
						R225	1-249-433-11	CARBON	22K	5%	1/4W
R121	1-249-431-11	CARBON	15K	5%	1/4W	R226	1-249-429-11	CARBON	10K	5%	1/4W
R122	1-249-415-11	CARBON	680	5%	1/4W F	R227	1-249-433-11	CARBON	22K	5%	1/4W
			(RG22:AEP,UK/RG33:AEP,UK)			R228	1-249-437-11	CARBON	47K	5%	1/4W
R123	1-249-425-11	CARBON	4.7K	5%	1/4W F						
R124	1-249-429-11	CARBON	10K	5%	1/4W	R229	1-249-409-11	CARBON	220	5%	1/4W F
R125	1-249-429-11	CARBON	10K	5%	1/4W	R230	1-249-437-11	CARBON	47K	5%	1/4W
						R231	1-249-428-11	CARBON	8.2K	5%	1/4W F
R126	1-247-807-31	CARBON	100	5%	1/4W	R232	1-249-429-11	CARBON	10K	5%	1/4W
R127	1-249-425-11	CARBON	4.7K	5%	1/4W F	R233	1-249-437-11	CARBON	47K	5%	1/4W
R128	1-249-425-11	CARBON	4.7K	5%	1/4W F						
R129	1-247-807-31	CARBON	100	5%	1/4W	R234	1-247-903-00	CARBON	1M	5%	1/4W
R130	1-249-425-11	CARBON	4.7K	5%	1/4W F	R235	1-249-413-11	CARBON	470	5%	1/4W F
						R236	1-249-417-11	CARBON	1K	5%	1/4W F
R131	1-249-425-11	CARBON	4.7K	5%	1/4W F	R237	1-249-425-11	CARBON	4.7K	5%	1/4W F
R132	1-247-843-11	CARBON	3.3K	5%	1/4W	R238	1-249-425-11	CARBON	4.7K	5%	1/4W F
R133	1-247-807-31	CARBON	100	5%	1/4W						
R134	1-249-421-11	CARBON	2.2K	5%	1/4W F	R239	1-249-417-11	CARBON	1K	5%	1/4W F
R135	1-249-421-11	CARBON	2.2K	5%	1/4W F	R240	1-249-425-11	CARBON	4.7K	5%	1/4W F
						R241	1-249-425-11	CARBON	4.7K	5%	1/4W F
R136	1-249-421-11	CARBON	2.2K	5%	1/4W F	R242	1-249-434-11	CARBON	27K	5%	1/4W
R137	1-249-429-11	CARBON	10K	5%	1/4W	R243	1-249-393-11	CARBON	10	5%	1/4W F
R138	1-249-441-11	CARBON	100K	5%	1/4W						
R139	1-249-417-11	CARBON	1K	5%	1/4W F	R244	1-249-429-11	CARBON	10K	5%	1/4W
R140	1-249-429-11	CARBON	10K	5%	1/4W	R245	1-249-429-11	CARBON	10K	5%	1/4W
						R255	1-247-885-00	CARBON	180K	5%	1/4W
R141	1-249-439-11	CARBON	68K	5%	1/4W	R256	1-247-899-11	CARBON	680K	5%	1/4W
R142	1-249-410-11	CARBON	270	5%	1/4W F	R257	1-249-429-11	CARBON	10K	5%	1/4W
R143	1-249-429-11	CARBON	10K	5%	1/4W						
R144	1-249-429-11	CARBON	10K	5%	1/4W	R258	1-249-411-11	CARBON	330	5%	1/4W
R145	1-249-429-11	CARBON	10K	5%	1/4W	R259	1-247-899-11	CARBON	680K	5%	1/4W
						R260	1-247-885-00	CARBON	180K	5%	1/4W
R146	1-247-855-11	CARBON	10K	5%	1/4W	R261	1-249-429-11	CARBON	10K	5%	1/4W
R171	1-247-807-31	CARBON	100	5%	1/4W	R262	1-249-411-11	CARBON	330	5%	1/4W
			(RG22:AEP,UK/RG33:AEP,UK)								
R172	1-247-891-00	CARBON	330K	5%	1/4W	R263	1-247-843-11	CARBON	3.3K	5%	1/4W
			(RG22:AEP,UK/RG33:AEP,UK)			R264	1-249-441-11	CARBON	100K	5%	1/4W
R174	1-249-417-11	CARBON	1K	5%	1/4W F	R265	1-247-887-11	CARBON	220K	5%	1/4W
			(RG22:AEP,UK/RG33:AEP,UK)			R266	1-249-440-11	CARBON	82K	5%	1/4W
R175	1-249-413-11	CARBON	470	5%	1/4W F	R267	1-249-428-11	CARBON	8.2K	5%	1/4W F
			(RG22:AEP,UK/RG33:AEP,UK)								
R177	1-247-807-31	CARBON	100	5%	1/4W	R268	1-249-428-11	CARBON	8.2K	5%	1/4W F
			(RG22:AEP,UK/RG33:AEP,UK)			R269	1-249-429-11	CARBON	10K	5%	1/4W
R181	1-249-425-11	CARBON	4.7K	5%	1/4W F	R270	1-249-428-11	CARBON	8.2K	5%	1/4W F
			(RG22:AEP,UK/RG33:AEP,UK)			R271	1-249-436-11	CARBON	39K	5%	1/4W
R183	1-249-409-11	CARBON	220	5%	1/4W F	R272	1-249-436-11	CARBON	39K	5%	1/4W
			(RG22:AEP,UK/RG33:AEP,UK)								
						R274	1-249-440-11	CARBON	82K	5%	1/4W

Ref. No.	Part No.	Description				Remarks	Ref. No.	Part No.	Description				Remarks
R275	1-249-432-11	CARBON	18K	5%	1/4W		R351	1-249-441-11	CARBON	100K	5%	1/4W	
R276	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R352	1-249-441-11	CARBON	100K	5%	1/4W	
R277	1-249-429-11	CARBON	10K	5%	1/4W		R353	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R278	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R354	1-249-425-11	CARBON	4.7K	5%	1/4W	F
							R355	1-249-417-11	CARBON	1K	5%	1/4W	F
R279	1-249-429-11	CARBON	10K	5%	1/4W								
R280	1-249-415-11	CARBON	680	5%	1/4W	F	R356	1-249-413-11	CARBON	470	5%	1/4W	F
R281	1-249-417-11	CARBON	1K	5%	1/4W	F	R357	1-249-429-11	CARBON	10K	5%	1/4W	
R282	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R358	1-249-429-11	CARBON	10K	5%	1/4W	
R283	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R359	1-247-901-11	CARBON	820K	5%	1/4W	
							R360	1-247-901-11	CARBON	820K	5%	1/4W	
R284	1-249-415-11	CARBON	680	5%	1/4W	F							
R285	1-249-417-11	CARBON	1K	5%	1/4W	F	R361	1-249-417-11	CARBON	1K	5%	1/4W	F
R286	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R362	1-249-417-11	CARBON	1K	5%	1/4W	F
R287	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R363	1-249-429-11	CARBON	10K	5%	1/4W	
R288	1-249-415-11	CARBON	680	5%	1/4W	F	R364	1-249-429-11	CARBON	10K	5%	1/4W	
							R365	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R289	1-249-417-11	CARBON	1K	5%	1/4W	F							
R290	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R366	1-249-429-11	CARBON	10K	5%	1/4W	
R291	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R367	1-249-429-11	CARBON	10K	5%	1/4W	
R292	1-249-429-11	CARBON	10K	5%	1/4W		R368	1-249-409-11	CARBON	220	5%	1/4W	F
R293	1-247-807-31	CARBON	100	5%	1/4W		R369	1-249-434-11	CARBON	27K	5%	1/4W	
							R370	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R294	1-247-807-31	CARBON	100	5%	1/4W								
R295	1-247-807-31	CARBON	100	5%	1/4W		R371	1-249-431-11	CARBON	15K	5%	1/4W	
R296	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R372	1-247-807-31	CARBON	100	5%	1/4W	
R297	1-249-432-11	CARBON	18K	5%	1/4W		R373	1-249-438-11	CARBON	56K	5%	1/4W	
R298	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R374	1-247-843-11	CARBON	56K	5%	1/4W	
							R376	1-249-434-11	CARBON	27K	5%	1/4W	
R299	1-249-437-11	CARBON	47K	5%	1/4W								
R300	1-249-441-11	CARBON	100K	5%	1/4W		R378	1-247-843-11	CARBON	3.3K	5%	1/4W	
R301	1-249-432-11	CARBON	18K	5%	1/4W		R379	1-249-441-11	CARBON	100K	5%	1/4W	
R302	1-249-432-11	CARBON	18K	5%	1/4W		R380	1-249-436-11	CARBON	39K	5%	1/4W	
R303	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R381	1-247-843-11	CARBON	3.3K	5%	1/4W	
							R382	1-247-895-91	CARBON	470K	5%	1/4W	
R304	1-249-428-11	CARBON	8.2K	5%	1/4W	F							
R307	1-249-417-11	CARBON	1K	5%	1/4W	F	R383	1-249-417-11	CARBON	1K	5%	1/4W	F
R308	1-249-417-11	CARBON	1K	5%	1/4W	F	R384	1-249-441-11	CARBON	100K	5%	1/4W	
R309	1-259-880-11	CARBON	2.2M	5%	1/4W		R385	1-249-431-11	CARBON	15K	5%	1/4W	
R310	1-259-880-11	CARBON	2.2M	5%	1/4W		R386	1-249-441-11	CARBON	100K	5%	1/4W	
							R387	1-249-437-11	CARBON	47K	5%	1/4W	
R311	1-249-428-11	CARBON	8.2K	5%	1/4W	F							
R312	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R388	1-215-868-00	METAL OXIDE	680	5%	1W	
R313	1-249-437-11	CARBON	47K	5%	1/4W		R389	1-249-417-11	CARBON	1K	5%	1/4W	F
R314	1-249-437-11	CARBON	47K	5%	1/4W		R390	1-249-417-11	CARBON	1K	5%	1/4W	F
R315	1-249-429-11	CARBON	10K	5%	1/4W		R391	1-249-426-11	CARBON	5.6K	5%	1/4W	
							R394	1-249-417-11	CARBON	1K	5%	1/4W	F
R316	1-249-441-11	CARBON	100K	5%	1/4W								
R317	1-249-437-11	CARBON	47K	5%	1/4W		R395	1-215-868-00	METAL OXIDE	680	5%	1W	
R318	1-249-437-11	CARBON	47K	5%	1/4W		R396	1-260-304-51	CARBON	10	5%	1/2W	
R319	1-247-885-00	CARBON	180K	5%	1/4W								
R320	1-247-807-31	CARBON	100	5%	1/4W		R397	1-260-304-51	CARBON	10	5%	1/2W	
R321	1-249-429-11	CARBON	10K	5%	1/4W								
R322	1-249-429-11	CARBON	10K	5%	1/4W		R398	1-260-304-51	CARBON	10	5%	1/2W	
R323	1-249-429-11	CARBON	10K	5%	1/4W								
R328	1-247-807-31	CARBON	100	5%	1/4W		R399	1-260-304-51	CARBON	10	5%	1/2W	
R340	1-249-426-11	CARBON	5.6K	5%	1/4W								
R341	1-247-893-11	CARBON	390K	5%	1/4W		R400	1-249-393-11	CARBON	10	5%	1/4W	F
R342	1-249-426-11	CARBON	5.6K	5%	1/4W		R407	1-259-880-11	CARBON	2.2M	5%	1/4W	
R343	1-247-893-11	CARBON	390K	5%	1/4W		R408	1-259-880-11	CARBON	2.2M	5%	1/4W	
R344	1-247-807-31	CARBON	100	5%	1/4W		R411	1-249-429-11	CARBON	10K	5%	1/4W	
R345	1-247-807-31	CARBON	100	5%	1/4W		R412	1-249-429-11	CARBON	10K	5%	1/4W	
R346	1-247-807-31	CARBON	100	5%	1/4W		R418	1-249-413-11	CARBON	470	5%	1/4W	F
R347	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R801	1-249-429-11	CARBON	10K	5%	1/4W	
R348	1-249-425-11	CARBON	4.7K	5%	1/4W	F	R802	1-249-435-11	CARBON	33K	5%	1/4W	
R349	1-249-426-11	CARBON	5.6K	5%	1/4W		R803	1-249-433-11	CARBON	22K	5%	1/4W	
R350	1-249-426-11	CARBON	5.6K	5%	1/4W		R804	1-249-425-11	CARBON	4.7K	5%	1/4W	F

HCD-GX30/RG22/RG33

- MAIN
- MOTOR
- PANEL

Ref. No.	Part No.	Description	Remarks		
R805	1-249-433-11	CARBON	22K	5%	1/4W
R806	1-249-426-11	CARBON	5.6K	5%	1/4W
R807	1-249-429-11	CARBON	10K	5%	1/4W
R808	1-249-438-11	CARBON	56K	5%	1/4W
R809	1-249-437-11	CARBON	47K	5%	1/4W
R812	1-249-425-11	CARBON	4.7K	5%	1/4W F (GX30/RG33)
R813	1-249-426-11	CARBON	5.6K	5%	1/4W (GX30/RG33)
R814	1-249-426-11	CARBON	5.6K	5%	1/4W (GX30/RG33)
R815	1-249-437-11	CARBON	47K	5%	1/4W (GX30/RG33)
R816	1-249-421-11	CARBON	2.2K	5%	1/4W F
R854	1-247-807-31	CARBON	100	5%	1/4W
< COMPOSITION CIRCUIT BLOCK >					
RB101	1-234-575-11	ENCAPSULATED COMPONENT			
< VARIABLE RESISTOR >					
RV101	1-241-765-11	RES, ADJ, CARBON 22K			
< RELAY >					
RY2	1-755-373-11	RELAY			
< TRANSFORMER >					
T101	1-435-792-11	TRANSFORMER, DISCRIMINATOR			
< VIBRATOR >					
X102	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (RG22:AEP,UK/RG33:AEP,UK)			

	1-675-910-14	MOTOR BOARD *****			
< CAPACITOR >					
C721	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
< CONNECTOR >					
CN721	1-770-516-31	CONNECTOR, FFC 8P			
CN722	1-785-330-11	PIN, CONNECTOR (LIGHT ANGLE)4P			
< SWITCH >					
S701	1-771-822-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE)			

	A-4676-626-A	PANEL BOARD, COMPLETE (GX30/RG33:MX,AR)			
	A-4729-718-A	PANEL BOARD, COMPLETE (RG22:AEP,UK/RG33:AEP,UK)			
	A-4729-766-A	PANEL BOARD, COMPLETE (RG22:AUS,E2,E51, SP,MX,AR,EA,TH,TW/RG33:E2,E51)			

	4-238-614-01	FL HOLDER R			
	4-238-613-01	FL HOLDER L			

Ref. No.	Part No.	Description	Remarks		
< CAPACITOR >					
C601	1-126-916-11	ELECT	1000uF	20.00%	6.3V
C602	1-161-494-00	CERAMIC	0.022uF		25V
C603	1-126-964-11	ELECT	10uF	20.00%	50V
C604	1-136-165-00	FILM	0.1uF	5.00%	50V
C605	1-136-165-00	FILM	0.1uF	5.00%	50V
C606	1-126-947-11	ELECT	47uF	20.00%	10V
C607	1-162-294-31	CERAMIC	0.001uF	10%	50V
C608	1-162-205-31	CERAMIC	18PF	5%	50V
C609	1-162-203-31	CERAMIC	15PF	5.00%	50V
C610	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C611	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C612	1-162-306-11	CERAMIC	0.01uF	30.00%	16V
C613	1-162-282-31	CERAMIC	100PF	10%	50V
C614	1-162-282-31	CERAMIC	100PF	10%	50V
C615	1-162-282-31	CERAMIC	100PF	10%	50V
C616	1-162-282-31	CERAMIC	100PF	10%	50V
C617	1-162-282-31	CERAMIC	100PF	10%	50V
C618	1-162-282-31	CERAMIC	100PF	10%	50V
C619	1-162-282-31	CERAMIC	100PF	10%	50V
C620	1-162-282-31	CERAMIC	100PF	10%	50V
C621	1-162-282-31	CERAMIC	100PF	10%	50V
C622	1-162-282-31	CERAMIC	100PF	10%	50V
C623	1-162-282-31	CERAMIC	100PF	10%	50V
C624	1-162-282-31	CERAMIC	100PF	10%	50V
C625	1-126-618-11	ELECT	33uF	20.00%	50V
C626	1-126-618-11	ELECT	33uF	20.00%	50V
C627	1-126-957-11	ELECT	0.22uF	20.00%	50V
C628	1-126-957-11	ELECT	0.22uF	20.00%	50V
C629	1-128-551-11	ELECT	22uF	20.00%	25V
C630	1-164-159-21	CERAMIC	0.1uF		50V
C631	1-247-855-11	CARBON	10K	5%	1/4W
C632	1-247-855-11	CARBON	10K	5%	1/4W
C681	1-162-294-31	CERAMIC	0.001uF	10%	50V
C682	1-162-294-31	CERAMIC	0.001uF	10%	50V
C685	1-164-159-21	CERAMIC	0.1uF		50V
C687	1-164-159-21	CERAMIC	0.1uF		50V
C691	1-162-294-31	CERAMIC	0.001uF	10%	50V
C692	1-162-294-31	CERAMIC	0.001uF	10%	50V
C693	1-164-159-21	CERAMIC	0.1uF		50V
C699	1-126-963-11	ELECT	4.7uF	20.00%	50V
< FILTER >					
CF101	1-579-175-11	VIBRATOR, CERAMIC			
< CONNECTOR >					
CN601	1-793-767-11	CONNECTOR, BOARD TO BOARD 30P			
CN602	1-784-780-11	CONNECTOR, FFC 19P			
CN605	1-816-422-11	PIN, CONNECTOR 3P			
CN662	1-564-723-11	PIN, CONNECTOR (SMALL TYPE) 7P			
CN691	1-816-423-11	SOCKET, CONNECTOR 3P			
< DIODE >					
D601	8-719-200-82	DIODE 11ES2-NTA1B			
D602	8-719-200-82	DIODE 11ES2-NTA1B			
D603	8-719-991-33	DIODE 1SS133T-77 (GX30/RG22:TH,AUS)			
D604	8-719-991-33	DIODE 1SS133T-77 (GX30/RG22:TH,AUS)			
D605	8-719-991-33	DIODE 1SS133T-77 (RG22:E2,E51,AR,MX/RG33:E2,E51,AR,MX)			

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HCD-GX30/RG22/RG33

PANEL

POWER

Ref. No.	Part No.	Description	Remarks
S623	1-762-196-21	SWITCH, TACT (TAPE A/B)	
S624	1-762-196-21	SWITCH, TACT (GAME)	
< ROTARY ENCODER >			
VR601	1-477-194-11	ENCODER, ROTARY (VOLUME)	
< VIBRATOR >			
X601	1-567-098-41	VIBRATOR, CRYSTAL (32.768MHZ)	




A-4676-627-A	POWER BOARD, COMPLETE (RG22:AUS,E2,E51,SP,MX,AR,EA,TH,TW)		
A-4729-719-A	POWER BOARD, COMPLETE (RG22:AEP,UK)		
A-4729-939-A	POWER BOARD, COMPLETE (GX30/RG33:MX,AR)		
A-4729-962-A	POWER BOARD, COMPLETE (RG33:AEP,UK)		
A-4729-982-A	POWER BOARD, COMPLETE (RG33:E2,E51) *****		
< CAPACITOR >			
C501	1-126-964-11	ELECT	10uF 20.00% 50V
C502	1-162-294-31	CERAMIC	0.001uF 10% 50V
C503	1-162-286-21	CERAMIC	220PF 10.00% 50V
C504	1-128-551-11	ELECT	22uF 20.00% 25V
C507	1-130-493-00	MYLAR	0.068uF 5% 50V
C508	1-130-493-00	MYLAR	0.068uF 5% 50V
C509	1-128-560-11	ELECT	22uF 20.00% 100V (GX30/RG33)
C509	1-126-965-91	ELECT	22uF 20.00% 50V (RG22)
C511	1-162-306-11	CERAMIC	0.01uF 30.00% 16V
C512	1-162-294-31	CERAMIC	0.001uF 10% 50V (RG22:AEP,UK/RG33:AEP,UK)
C513	1-164-159-21	CERAMIC	0.1uF 50V (RG22:AEP,UK/RG33:AEP,UK)
C541	1-130-777-00	MYLAR	0.1uF 10.00% 100V
C542	1-135-928-21	ELECT	2200uF 20% 63V (GX30/RG33)
C542	1-135-832-11	ELECT	2200uF 20% 50V (RG22)
C543	1-164-159-21	CERAMIC	0.1uF 50V
C544	1-126-942-61	ELECT	1000uF 20.00% 25V
C546	1-128-549-11	ELECT	3300uF 20.00% 35V
C551	1-126-964-11	ELECT	10uF 20.00% 50V
C552	1-162-294-31	CERAMIC	0.001uF 10% 50V
C553	1-162-286-21	CERAMIC	220PF 10.00% 50V
C554	1-128-551-11	ELECT	22uF 20.00% 25V
C557	1-130-493-00	MYLAR	0.068uF 5% 50V
C558	1-130-493-00	MYLAR	0.068uF 5% 50V
C559	1-128-560-11	ELECT	22uF 20.00% 100V (GX30/RG33)
C559	1-126-965-91	ELECT	22uF 20.00% 50V (RG22)
C591	1-130-777-00	MYLAR	0.1uF 10.00% 100V
C592	1-135-928-21	ELECT	2200uF 20% 63V (GX30/RG33)
C592	1-135-832-11	ELECT	2200uF 20% 50V (RG22)

Ref. No.	Part No.	Description	Remarks
< CONNECTOR >			
* CN504	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	(GX30/RG33)
< DIODE >			
D501	8-719-991-33	DIODE	1SS133T-77
D502	8-719-991-33	DIODE	1SS133T-77
D541	8-719-510-68	DIODE	D5SBA204101 (GX30/RG33)
D541	8-719-028-23	DIODE	D3SBA20-4101 (RG22)
D542	8-719-200-82	DIODE	11ES2-NTA1B
D543	8-719-200-82	DIODE	11ES2-NTA1B
D551	8-719-991-33	DIODE	1SS133T-77
< TERMINAL >			
* EP502	1-537-738-21	TERMINAL, EARTH (RG33:AEP)	
* EP501	1-537-738-21	TERMINAL, EARTH	(RG22:AEP,UK/RG33:AEP,UK)
< IC >			
IC501	8-749-016-94	IC	STK402-090S (GX30/RG33)
IC501	8-749-016-93	IC	STK402-070S (RG22)
< TRANSISTOR >			
Q501	8-729-119-78	TRANSISTOR	2SC2785TP-HFE
Q503	8-729-119-76	TRANSISTOR	2SA1175TP-HFE
Q504	8-729-119-78	TRANSISTOR	2SC2785TP-HFE
Q551	8-729-119-78	TRANSISTOR	2SC2785TP-HFE
Q581	8-729-119-78	TRANSISTOR	2SC2785TP-HFE
Q582	8-729-119-78	TRANSISTOR	2SC2785TP-HFE (GX30/RG33)
Q583	8-729-029-86	TRANSISTOR	DTC124ES (GX30/RG33)
Q584	8-729-119-78	TRANSISTOR	2SC2785TP-HFE (GX30/RG33)
< RESISTOR >			
R501	1-249-417-11	CARBON	1K 5% 1/4W F
R502	1-249-438-11	CARBON	56K 5% 1/4W
R503	1-249-417-11	CARBON	1K 5% 1/4W F
R504	1-249-438-11	CARBON	56K 5% 1/4W
R505	1-249-417-11	CARBON	1K 5% 1/4W F
R506	1-249-431-11	CARBON	15K 5% 1/4W
R507	1-249-441-11	CARBON	100K 5% 1/4W
△ R508	1-217-156-00	METAL	0.22 10% 5W (GX30/RG33)
△ R508	1-217-151-00	METAL	0.22 10% 2W (RG22)
R509	1-260-076-11	CARBON	10 5% 1/2W
△ R510	1-217-156-00	METAL	0.22 10% 5W (GX30/RG33)
△ R510	1-217-151-00	METAL	0.22 10% 2W (RG22)
△ R511	1-212-881-11	FUSIBLE	100 5% 1/4W
△ R512	1-202-972-61	FUSIBLE	1 5% 1/4W
R513	1-249-433-11	CARBON	22K 5% 1/4W
R514	1-249-421-11	CARBON	2.2K 5% 1/4W F
R515	1-249-433-11	CARBON	22K 5% 1/4W
R516	1-249-429-11	CARBON	10K 5% 1/4W
R517	1-249-421-11	CARBON	2.2K 5% 1/4W F

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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POWER REM SENSOR SPDL SUB TRANS TRANS

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HCD-GX30/RG22/RG33

TRANS

VIDEO OUT

Ref. No.	Part No.	Description	Remarks
< DIODE >			
D911	8-719-200-82	DIODE 11ES2-NTA1B	
D912	8-719-982-15	DIODE MTZJ-T-77-27B	
D913	8-719-109-89	DIODE MTZJ-T-77-5.6B	
< TRANSISTOR >			
Q911	8-729-048-52	TRANSISTOR 2SA1932(TP)	
< RESISTOR >			
R905	1-249-429-11	CARBON 10K 5% 1/4W	
△ R911	1-217-637-00	FUSIBLE 1 5% 1/4W	
R912	1-249-417-11	CARBON 1K 5% 1/4W	F
R913	1-249-429-11	CARBON 10K 5% 1/4W	
R915	1-247-807-31	CARBON 100 5% 1/4W	
R916	1-247-807-31	CARBON 100 5% 1/4W	
△ R918	1-219-237-91	SOLID 3.3M 20% 1/2W	(GX30/RG33:MX,AR)
△ R919	1-219-122-91	FUSIBLE 0.33 5% 1/4W	
△ R920	1-219-122-91	FUSIBLE 0.33 5% 1/4W	
< SWITCH >			
△ S901	1-786-055-21	SELECTOR, VOLTAGE (VOLTAGE SELECTOR)	(RG22:E2,E51,SP,EA,TW/RG33:E2,E51)

	1-684-298-21	VIDEO OUT BOARD	*****
< CONNECTOR >			
* CN682	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
< JACK >			
JK602	1-774-227-31	JACK, PIN 1P (VIDEO OUT)	

Ref. No.	Part No.	Description	Remarks
MISCELLANEOUS			

56	1-773-119-11	WIRE (FLAT TYPE) (19 CORE)	
60	1-796-360-11	DECK, MECH	
101	1-751-688-11	WIRE (FLAT TYPE) (13 CORE)	
△ 104	1-690-608-11	CORD, POWER (RG22:AUS)	
△ 104	1-777-071-82	CORD, POWER (RG22:AEP,E51,EA/RG33:AEP,E51)	
△ 104	1-783-528-11	CORD, POWER (TRACKING) (RG22:SP,TH,TW)	
△ 104	1-783-532-11	CORD, POWER (GX30)	
△ 104	1-783-941-22	CORD, POWER (RG22:AR/RG33:AR)	
△ 104	1-790-226-12	CORD, POWER (RG22:UK/RG33:UK)	
△ 104	1-791-901-11	CORD, POWER (RG22:E2,MX/RG33:E2,MX)	
159	1-791-983-12	WIRE (FLAT TYPE) (8 CORE)	
166	1-471-035-11	MAGNET ASSY	
△ 186	8-820-020-02	OPTICAL PICK-UP KSM-213DCP/Z-NP	
△ F914	1-533-454-11	FUSE, GLASS TUBE (DIA. 5) (GX30)	
△ F914	1-533-473-11	FUSE, GLASS TUBE (DIA. 5) (RG22/RG33)	
△ F919	1-533-453-11	FUSE, GLASS TUBE (DIA. 5) (GX30)	
△ F919	1-533-471-11	FUSE, GLASS TUBE (DIA. 5)	(RG22:E2,E51,SP,EA,TW)
△ F919	1-533-472-11	FUSE, GLASS TUBE (DIA. 5) (RG33:E2,E51)	
△ F920	1-533-454-11	FUSE, GLASS TUBE (DIA. 5) (GX30)	
△ F920	1-533-473-11	FUSE, GLASS TUBE (DIA. 5) (RG22/RG33)	
FLD601	1-518-792-11	INDICATOR TUBE, FLUORESCENT	
M721	1-763-790-11	MOTOR, DC (TURN)	
M961	1-763-738-21	FAN, DC (GX30/RG33:MX,AR)	
△ T911	1-437-389-11	TRANSFORMER, POWER (GX30/RG33:MX,AR)	
△ T911	1-437-678-11	TRANSFORMER, POWER (RG22:AUS,MX,AR)	
△ T911	1-437-679-11	TRANSFORMER, POWER (RG22:AEP,UK)	
△ T911	1-437-680-11	TRANSFORMER, POWER	(RG22:E2,E51,SP,TH,TW)
△ T911	1-437-762-11	TRANSFORMER, POWER (RG33:AEP,UK)	
△ T911	1-437-763-11	TRANSFORMER, POWER (RG33:E2,E51)	
△ T911	1-437-830-11	TRANSFORMER, POWER (RG22:EA)	

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REVISION HISTORY

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